STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
WM. H. MOORE, Director

DIVISION OF MINES
FERRY BUILDING, SAN FRANCISCO

WALTER W. BRADLEY — State Mineralogist

San Francisco] BULLETIN No. 126 [November 1943

CALIFORNIA MINERAL PRODUCTION

AND

DIRECTORY OF MINERAL PRODUCERS

FOR 1942

By
HENRY H. SYMONS

30633

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:03 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Original from
THE OHIO STATE UNIVERSITY

CONTENTS

Page

LETTER OF TRANSMITTAL ... 7
INTRODUCTION ... 9

CHAPTER I

SUMMARY OF THE MINERAL INDUSTRY IN CALIFORNIA DURING THE YEAR OF 1940 ... 11
TABULATION OF THE MINERAL PRODUCTION, SHOWING COMPARATIVE AMOUNTS AND VALUES—1939 AND 1940 ... 12
TABLE SHOWING COMPARATIVE MINERAL PRODUCTION OF THE VARIOUS COUNTIES IN CALIFORNIA FOR 1939 AND 1940 ... 13
TOTAL PRODUCTION, 1887-1940 ... 14

CHAPTER II

FUELS (HYDROCARBONS)—
INTRODUCTORY ... 15
COAL ... 15
NATURAL GAS ... 16
PETROLEUM ... 19

CHAPTER III

METALS—
INTRODUCTORY ... 32
ALUMINUM ... 32
ANTIMONY ... 33
ARSENIC ... 33
BERYLLIUM ... 34
BISMUTH ... 34
CADMIUM ... 35
CHROMITE ... 35
COBALT ... 37
COPPER ... 38
GOLD ... 39
IRIDIUM. (*See* Platinum.)
IRON ... 43
LEAD ... 44
MANGANESE ... 46
MOLYBDENUM ... 47
NICKEL ... 48
OSMIUM. (*See* Platinum.)
PALLADIUM. (*See* Platinum.)
PLATINUM ... 48
QUICKSILVER ... 49
SILVER ... 51
TIN ... 53
TITANIUM ... 54
TUNGSTEN ... 55
VANADIUM ... 56
ZINC ... 56

CHAPTER IV

STRUCTURAL MATERIALS—
INTRODUCTORY ... 58
ASPHALT ... 58
BITUMINOUS ROCK ... 59
BRICK AND HOLLOW TILE ... 60
CEMENT ... 62
GRANITE ... 63
LIME ... 64
MAGNESITE ... 65
MARBLE ... 67
ONYX AND TRAVERTINE ... 68
SANDSTONE ... 68
SERPENTINE ... 69
SLATE ... 70
STONE—MISCELLANEOUS ... 71
Paving Blocks ... 71
Grinding-Mill Pebbles ... 72
Sand and Gravel ... 72
Crushed Rock ... 73

CHAPTER V

INDUSTRIAL MATERIALS—
INTRODUCTORY ... 76
ASBESTOS ... 77
BARITE ... 78
BENTONITE (Fuller's Earth) ... 79
CALCIUM SILICATE ... 80
CARBON DIOXIDE GAS ... 81
CLAY—POTTERY ... 82

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

INDUSTRIAL MATERIALS—Continued Page

Diatomite ---- 84
Dolomite ---- 86
Feldspar ---- 86
Fluorspar ---- 87
Garnets (Abrasive) ---- 88
Gems ---- 88
Graphite ---- 90
Gypsum ---- 90
Limestone ---- 92
Lithia ---- 93
Mica ---- 94
Mineral Paint ---- 95
Mineral Water ---- 96
Phosphates ---- 97
Pumice and Volcanic Ash ---- 97
Pyrites ---- 98
Shale Oil ---- 99
Silica (Sand and Quartz) ---- 99
Sillimanite-Andalusite-Kyanite Group ---- 101
Soapstone and Talc ---- 102
Strontium ---- 104
Sulphur ---- 104
Zircon ---- 105

Chapter VI

SALINES—
Introductory ---- 106
Alum Minerals ---- 106
Borates ---- 107
Bromine ---- 108
Calcium Chloride ---- 109
Iodine ---- 109
Magnesium Salts ---- 110
Nitrates ---- 111
Potash ---- 112
Salt ---- 112
Soda ---- 114

Chapter VII

MINERAL PRODUCTION OF CALIFORNIA BY COUNTIES—
Introductory ---- 117
Alameda ---- 118
Alpine ---- 118
Amador ---- 119
Butte ---- 119
Calaveras ---- 120
Colusa ---- 120
Contra Costa ---- 120
Del Norte ---- 121
El Dorado ---- 121
Fresno ---- 121
Glenn ---- 122
Humboldt ---- 122
Imperial ---- 122
Inyo ---- 123
Kern ---- 124
Kings ---- 124
Lake ---- 125
Lassen ---- 125
Los Angeles ---- 125
Madera ---- 126
Marin ---- 126
Mariposa ---- 126
Mendocino ---- 127
Merced ---- 127
Modoc ---- 128
Mono ---- 128
Monterey ---- 128
Napa ---- 129
Nevada ---- 129
Orange ---- 129
Placer ---- 130
Plumas ---- 130
Riverside ---- 131
Sacramento ---- 131
San Benito ---- 131
San Bernardino ---- 132
San Diego ---- 132
San Francisco ---- 133
San Joaquin ---- 133
San Luis Obispo ---- 133

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

MINERAL PRODUCTION OF CALIFORNIA BY COUNTIES—Continued Page
San Mateo 134
Santa Barbara 135
Santa Clara 135
Santa Cruz 135
Shasta 136
Sierra 136
Siskiyou 136
Solano 137
Sonoma 137
Stanislaus 138
Sutter 138
Tehama 138
Trinity 139
Tulare 139
Tuolumne 139
Ventura 140
Yolo 140
Yuba 141

CHAPTER VIII

DIRECTORY OF PRODUCERS OF METALLIC AND NONMETALLIC MINERALS IN CALIFORNIA, 1942

Introductory 143
Antimony 145
Asbestos 145
Barites 145
Bentonite (Fuller's Earth) 146
Bituminous Rock 146
Borates 147
Bromite 147
Calcium Chloride 148
Calcium Silicate 148
Carbon Dioxide Gas 148
Cement 149
Chromite 150
Clay 152
Coal 155
Copper 156
Diatomite 157
Dolomite 157
Feldspar 158
Gems 158
Gold 159
Granite 165
Gypsum 166
Iodine 167
Iron 167
Lead 168
Lime and Limestone 169
Lithia 170
Magnesite 170
Magnesium Salts 171
Manganese Ore 171
Marble (including Onyx and Travertine) 173
Mineral Paint 173
Mineral Water 174
Molybdenum Ore 175
Platinum 176
Potash 176
Pumice and Volcanic Ash 177
Pyrite 177
Quicksilver 178
Salt 180
Sandstone 181
Silica (Sand and Quartz) 182
Sillimanite-Andalusite-Cyanite Group 182
Silver 183
Slate 184
Soapstone and Talc 185
Soda 185
Stone, Miscellaneous 186
Strontium 193
Sulphur 193
Titanium 193
Tungsten 194
Zinc 195
Smelters, Custom Mills, Ore and Metal Buyers 196

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

APPENDIX

Page
PUBLIC RESOURCES CODE ---- 197
DEPARTMENT OF NATURAL RESOURCES ACT ---- 198
MINES AND MINING ---- 199
PUBLICATIONS OF THE STATE DIVISION OF MINES ---- 201
INDEX ---- 219

CHARTS, ILLUSTRATIONS, PHOTOS AND MAPS

Mill of Castro Chrome Associates, Goldtree Siding near San Luis Obispo, San Luis Obispo County ---- 36
Manganese ore-dressing plant of General Dry Battery Company, near Patterson, Stanislaus County ---- 46
Condensers of Aetna Quicksilver Mine, Napa County ---- 50
Chart showing Diversity in Uses of Salt ---- 113
American Potash & Chemical Company at Searles Lake, San Bernardino County, showing section of Soda Plant ---- 115
Quicksilver Mine at Coso Hot Springs, Inyo County ---- 123
Panning drill cuttings, prospecting chromite orebodies at Castro Mine near San Luis Obispo, San Luis Obispo County ---- 134

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

LETTER OF TRANSMITTAL

To His Excellency, THE HONORABLE EARL WARREN,
Governor of the State of California.

SIR: I have the honor to herewith transmit Bulletin No. 126 of the Division of Mines, of the Department of Natural Resources, being the annual report of the statistics of the mineral production of California.

The remarkable variety, total values, and wide distribution of many of our minerals revealed herein show California's importance as a producer of commercial minerals among the states of the Union.

Respectfully submitted.

WM. H. MOORE,
Director, Department of Natural Resources

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:05 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Original from
THE OHIO STATE UNIVERSITY

INTRODUCTION

It is the endeavor of the staff of the State Division of Mines (formerly State Mining Bureau), in these annual reports of the mineral industries of California, to so compile the statistics of production that they will be of actual use to producers and to those interested in the utilization of the mineral products of our State, while at the same time keeping the individual's data confidential. In addition to the mere figures of output, we have included descriptions of the uses and characteristics of many of the materials, as well as a brief mention of their occurrences.

The compilation of accurate and dependable figures is an extremely difficult undertaking, and the State Mineralogist takes the opportunity of here expressing his appreciation of the cooperation of the producers in making this work possible. A fuller appreciation of the value of early responses to the requests sent out in January will result in earlier completion of the manuscript. Statistics lose much of their value if their publication is unnecessarily delayed.

Some of the data relative to properties and uses of many of the minerals herein described are repeated from preceding reports, as it is intended that this annual statistical bulletin shall be somewhat of a compendium of information on California's commercial minerals and their utilization.

WALTER W. BRADLEY,
State Mineralogist.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Original from
THE OHIO STATE UNIVERSITY

MINERAL INDUSTRY, CALIFORNIA, 1942

DATA COMPILED FROM DIRECT RETURNS FROM PRODUCERS IN ANSWER TO INQUIRIES SENT OUT BY THE CALIFORNIA STATE DIVISION OF MINES, FERRY BUILDING, SAN FRANCISCO, CALIFORNIA

CHAPTER ONE

The total value of the mineral output for California for the year 1942 was $408,738,434, being an increase of $34,412,206 over the total of 1941 which was $374,326,228. The increase was due to stimulated output owing to war demand. There were sixty different mineral substances, exclusive of a segregation of various stones grouped under gems; all fifty-eight counties of the State contributing to the list.

As revealed by the following, the salient features of 1942 as compared with the previous year were: such groups of mineral substances as fuels, structural materials, salines and industrial materials showed increased total values; the metals being the only group to show a decreased value. Of the year's mineral output petroleum showed the greatest increase in value followed in turn by miscellaneous stone, cement, natural gas, chromite, tungsten ore, potash, quicksilver, soda, salt, molybdenum ore, manganese ore, dolomite, iodine, borates, etc. Decreases were registered by gold, silver, mineral water, diatomite, etc. The greatest annual value for their output in California was recorded by bromine, carbon dioxide, cement, dolomite, iodine, iron ore, lithium salts, molybdenum ore, natural gas, quicksilver, silica (quartz and glass sand), soapstone and talc, soda, miscellaneous stone, and tungsten ore.

Of the fuels, petroleum showed an increase in value of $23,643,376 and an increase in amount from 229,664,784 barrels to 247,491,289 barrels of crude oil. The amount of natural gas utilized increased from 378,173,737 M cubic feet, worth $21,522,445, to 413,180,942 M cubic feet, valued at $25,698,052 and was the largest annual consumption on record.

Of the metals, a record total value was recorded for the annual output of iron ore, molybdenum ore, quicksilver, and tungsten ore; while chromite and manganese ore recorded the greatest since 1918; and lead since 1923. Nevertheless, these increased productions did not offset the decrease in the gold and silver production, and the group as a whole showed a decline in total value from $61,595,912 in 1941 to $46,185,885 in 1942.

Of the structural materials, cement increased from 19,531,608 barrels, worth $26,248,694, to 23,306,578 barrels, valued at $35,808,841; and miscellaneous stone, total value increased from $19,559,883 to $27,281,342. Both the above registered the largest annual production so far recorded in California. Brick and hollow building-tile increased in total value from $3,508,797 to $5,708,967 entirely due to the increased demand for fire brick. Building stones, such as granite, marble, and sandstone, registered a decline in total value, as also did magnesite.

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Of the industrial materials, the group as a whole increased in total value from $8,502,571 to $8,606,428, with such items as carbon dioxide, dolomite, lithia, silica (glass sand and quartz), sillimanite group, and soapstone and talc registering increased total values, and barites, bentonite, pottery clay, diatomite, gypsum, pumice and volcanic ash declining in value. The total value of the saline group increased from $11,927,533 to $15,645,003, with increases registered by borates, bromine, calcium chloride, iodine, potash, salt, and soda; and magnesium salts the only substance in this classification to show a decline in output.

By Substances

The following table shows the comparative yield of mineral substances of California for 1941 and 1942, as compiled from the returns received at the State Division of Mines, San Francisco, in answer to inquiry sent to producers:

Substance	1941		1942		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Antimony	19,153 lbs.	$2,537	*	*	* +
Asbestos	*	*	8,319 lbs.	$836	* +
Bentonite	18,369 tons	164,582	7,453 tons	67,503	97,079—
Borates	224,986 tons	4,745,872	203,716 tons	4,929,553	182,575+
Brick and hollow building tile		3,598,797		5,708,967	2,110,170+
Carbon Dioxide	138,862M cu ft.	258,563	193,143M cu. ft.	310,000	51,437+
Cement	19,531,608 bbls.	26,248,694	23,306,578 bbls.	35,808,841	9,560,147+
Chromite	15,453 long tons	355,354	*	*	* +
Clay (pottery)	551,347 tons	1,217,466	622,958 tons	1,200,293	17,173—
Copper	8,101,449 lbs.	955,970	2,138,149 lbs.	258,716	697,254—
Dolomite	22,300 tons	64,595	142,552 tons	413,469	348,874+
Gem materials		870		570	300—
Gold	1,408,793 fine ozs	49,307,755	847,997 fine ozs.	29,679,895	19,627,860—
Granite		261,661		186,872	174,789—
Gypsum	432,784 tons	854,184	425,268 tons	791,892	62,292—
Iron ore	*	*	99,092 tons	371,562	* +
Lead	6,900,851 lbs.	393,348	10,329,176 lbs.	692,054	298,706+
Lime	110,719 tons	996,514	*	*	* —
Limestone	459,153 tons	801,868	474,764 tons	1,155,352	353,484+
Magnesium salts	6,352 tons	654,372	6,026 tons	642,680	11,692—
Manganese ore	3,183 long tons	75,057	*	*	* +
Marble[a]		14,448	*	*	* —
Mineral water	17,746,256 gals.	988,520	17,559,686 gals.	567,897	420,623—
Natural gas	378,173,737 M cu. ft.	21,522,445	413,180,942 M cu. ft.	25,698,052	4,175,607+
Petroleum	229,664,784 bbls.	218,838,171	247,491,289 bbls.	242,481,545	23,643,374+
Platinum metals	909 fine ozs.	40,590	*	*	* —
Pumice and volcanic ash	85,309 tons	283,663	55,603 tons	209,539	74,124—
Quicksilver	25,612 flasks	4,509,041	*	*	* +
Salt	434,237 tons	1,180,929	672,324 tons	1,922,991	742,062+
Sandstone		13,143		8,587	4,556—
Silica (quartz and glass sand)	137,660 tons	514,266	193,174 tons	692,762	178,496+
Silver	2,154,188 fine ozs.	1,531,867	1,450,440 fine ozs.	1,031,424	500,443—
Soapstone and talc	47,935 tons	525,396	47,782 tons	545,509	20,113+
Soda	179,210 tons	2,028,718	267,723 tons	3,125,078	1,096,360+
Stone, miscellaneous[b]		19,559,883		27,281,342	7,721,459+
Sulphur	9,495 tons	209,296	*	*	* —
Tungsten ore	171,672 units	4,080,628	*	*	* +
Zinc	880,612 lbs.	66,046	1,275,795 lbs.	118,659	52,613+
Unapportioned		[c] 7,641,119	[d]	22,835,994	15,194,875+
Total value		$374,326,228		408,738,434	
Net increase					$34,412,206

* Included under 'Unapportioned'

[a] Includes onyx and travertine

[b] Includes macadam, crushed rock, ballast, rubble, riprap, sand and gravel

[c] Includes asbestos, barite, bituminous rock, bromine, calcium chloride, calcium silicate, coal, diatomite, feldspar, iodine, iron ore, lithia, magnesite, mica, mineral paint, molybdenum, potash, pyrite, sillimanite group, slate, strontium, titanium, zircon, paving block, tube-mill pebbles

[d] Includes antimony, baryte, bituminous rock, bromine, calcium chloride, chromite, coal, diatomite, feldspar, iodine, lithium salts, magnesite, manganese ore, marble, mineral paint, molybdenum ore, paving blocks, platinum metals, potash pyrite, quicksilver, sillimanite group, slate, strontium, sulphur, titanium, tube mill pebbles, tungsten ore

[e] In 1942 the limestone used to make lime was included with 'Industrial' limestone

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

By Counties

The following table shows the comparative value of the mineral production of the various counties in the State for the years 1941 and 1942:

County	1941	1942
Alameda	$4,447,145	$6,112,794
Alpine	6,996	3,097
Amador	3,724,412	2,092,030
Butte	3,171,872	2,400,858
Calaveras	4,394,039	2,998,235
Colusa	41,859	41,710
Contra Costa	3,263,091	4,066,476
Del Norte	112,253	401,253
El Dorado	2,294,164	1,320,250
Fresno	23,751,031	24,790,524
Glenn	33,204	504,755
Humboldt	85,267	294,805
Imperial	578,808	507,130
Inyo	5,020,026	8,134,848
Kern	70,854,548	75,529,067
Kings	11,300,067	12,955,120
Lake	1,091,883	832,712
Lassen	39,322	35,236
Los Angeles	101,657,195	106,120,578
Madera	180,330	87,727
Marin	186,322	229,269
Mariposa	1,327,594	1,321,238
Mendocino	75,074	133,995
Merced	2,579,986	1,848,319
Modoc	125,427	53,330
Mono	544,547	140,746
Monterey	419,372	576,152
Napa	1,019,184	1,447,638
Nevada	10,255,176	5,956,238
Orange	19,399,481	27,508,497
Placer	1,759,591	1,335,034
Plumas	2,370,901	346,936
Riverside	6,351,012	7,271,099
Sacramento	7,484,001	9,884,746
San Benito	1,988,205	3,104,054
San Bernardino	16,953,033	24,638,661
San Diego	1,411,934	1,188,661
San Francisco	56,187	110,140
San Joaquin	1,832,622	2,079,078
San Luis Obispo	572,025	1,031,114
San Mateo	3,425,263	3,874,496
Santa Barbara	10,018,726	11,415,045
Santa Clara	5,832,080	9,204,217
Santa Cruz	3,260,828	3,506,972
Shasta	3,758,848	4,025,223
Sierra	964,347	640,895
Siskiyou	2,578,223	1,620,514
Solano	1,141,335	2,720,428
Sonoma	1,187,406	1,655,326
Stanislaus	1,325,932	1,475,362
Sutter	121,848	95,438
Tehama	2,925	47,533
Trinity	1,556,365	1,053,442
Tulare	272,661	168,743
Tuolumne	1,142,905	854,080
Ventura	21,430,061	23,084,373
Yolo	281,303	617,418
Yuba	3,265,986	3,244,771
Totals	$374,326,228	$408,738,434

Total Mineral Production of California, by Years, Since 1887

The following tabulation gives the total value of mineral production of California by years since 1887, in which year compilation of such data by the State Mining Bureau (now Division of Mines) began. At the side of these figures have been placed the values of the most important metal and nonmetal items—gold and petroleum.

In the same period copper made an important growth beginning with 1897 following the entry of the Shasta County mines, and later Plumas County. Cement increased rapidly from 1902, while crushed

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

rock, sand and gravel as a group paralleled the cement increase. Quicksilver has been up and down. Mineral water and salt have always been important items, but the values fluctuate. Borax has increased materially since 1896. War-time increases, 1915–1918, were shown by chromite, copper, lead, magnesite, manganese, silver, tungsten and zinc. Most of these later declined, though silver, structural materials and copper increased in 1920–1924. Natural gas showed a steady increase from 1907, and in 1928–1933 its value was second only to petroleum. In 1939–1942 increases in output similar to those of 1915–1918 were shown by many mineral substances.

In 1929 the annual output of gold was the smallest since its discovery. From 1929 to 1940 there was a rapid increase in gold production, due in part to the raise in its price per ounce.

Total Mineral Production of California, by Years, Since 1887

Year	Total value of all minerals	Gold, value	Petroleum, value
1887	$19,785,868	$13,588,614	$1,357,144
1888	19,469,320	12,750,000	1,380,666
1889	16,681,731	11,212,913	368,048
1890	18,039,666	12,309,793	384,200
1891	18,872,413	12,728,869	401,264
1892	18,300,168	12,571,900	561,333
1893	18,811,261	12,422,811	608,092
1894	20,203,294	13,923,281	1,064,521
1895	22,844,663	15,334,317	1,000,235
1896	24,291,398	17,181,562	1,180,793
1897	25,142,441	15,871,401	1,918,269
1898	27,289,079	15,906,478	2,376,420
1899	29,313,460	15,336,031	2,660,793
1900	32,622,945	15,863,355	4,152,928
1901	34,355,981	16,989,044	2,961,102
1902	35,069,105	16,910,320	4,692,189
1903	37,759,040	16,471,264	7,313,271
1904	43,778,348	19,109,600	8,317,809
1905	43,069,227	19,197,043	9,007,820
1906	46,776,085	18,732,452	9,238,020
1907	55,697,949	16,727,928	16,783,943
1908	66,363,198	18,761,559	26,566,181
1909	82,972,209	20,237,870	32,398,187
1910	88,419,079	19,715,440	37,689,542
1911	87,497,879	19,738,908	40,552,088
1912	88,972,385	19,713,478	41,868,344
1913	98,644,639	20,406,958	48,578,014
1914	93,314,773	20,653,496	47,487,109
1915	96,663,369	22,442,296	43,503,837
1916	127,901,610	21,410,741	57,421,334
1917	161,202,962	20,087,504	86,976,209
1918	199,753,837	16,529,162	127,459,221
1919	195,830,002	16,695,955	142,610,563
1920	242,099,667	14,311,043	178,394,937
1921	268,157,472	15,704,822	203,138,225
1922	245,183,826	14,670,346	173,381,265
1923	344,024,678	13,379,013	242,731,309
1924	374,620,789	13,150,175	274,652,874
1925	434,519,660	13,065,330	330,609,829
1926	450,330,856	11,923,481	345,546,677
1927	366,781,394	11,671,018	260,735,498
1928	332,224,233	10,785,315	229,998,680
1929	432,248,228	8,526,703	321,366,863
1930	365,604,695	9,451,162	271,699,046
1931	215,964,420	10,814,162	141,835,723
1932	199,196,493	11,765,726	142,890,247
1933	206,489,058	15,683,075	143,063,972
1934	237,374,709	25,131,284	159,529,671
1935	263,404,317	31,165,050	179,335,311
1936	327,804,268	37,710,470	211,667,185
1937	361,515,951	41,110,230	237,845,872
1938	380,444,976	45,889,515	258,345,343
1939	352,462,564	50,234,240	226,358,856
1940	342,825,817	50,948,485	207,479,800
1941	374,326,228	49,307,755	218,838,171
1942	408,738,434	29,679,895	242,481,545
Totals	$9,522,652,117	$1,093,609,638	$6,012,766,388

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CHAPTER TWO

FUELS

Among the most important mineral products of California are its fuels. This subdivision includes coal, natural gas, and petroleum, the combined values of which make up practically 66 per cent of the State's entire mineral output for the year 1942.

There are deposits of peat known in several localities in California, small amounts of which are used as a fertilizer, and in stockfood preparations, but none has yet been recorded as utilized for fuel.

Comparison of values during 1941 and 1942 is shown in the following table:

Substance	1941		1942		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Coal*					
Natural gas	378,173,737 M. cu.ft.	$21,522,445	413,180,942 M cu.ft.	$25,698,502	$4,175,607+
Petroleum	229,664,784 bbls.	218,838,171	247,491,289 bbls.	242,481,545	23,643,374+
Total values		$240,360,616		$268,179,597	
Net increase					$27,818,981

* Concealed under 'Unapportioned.'

COAL

Bibliography: State Mineralogist Reports VII, XII-XV (inc.), XVII, XIX-XXVIII (inc.), XXVI, XXXI, XXXV, XXXVII, U. S. Geol. Surv., Bulletins 285, 316, 421, 431, 471, 581; Ann. Rept. 22, Pc. III.

The coal produced in California during 1942 is concealed under the 'Unapportioned' item so as not to reveal the output of a single producer in Amador County. The 1941 production came from one property each in Mendocino and Trinity counties. The 1941-1942 total production amounted to 190 net tons valued at $1,046 f.o.b. mine. This coal was consumed by the local market and also used on the property for camp purposes, power and forge, to carry on regular operations and development work.

Total Coal Production of California

The very considerable output of coal in the years previous to 1883 was almost entirely from the Mount Diablo district, Contra Costa County. Later the Tesla mine in Corral Hollow, Alameda County, was an important producer for a few years. Stone Canyon, Monterey County, was also an important producer for a short time, and there has been some coal shipped from properties in Amador, Fresno, Orange, Riverside, Siskiyou and Trinity counties. The following tabulation gives the annual tonnages and values, according to available records:

Generated on 2024-09-24 16:05 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Coal Output and Value, by Years

Year	Tons	Value	Year	Tons	Value
1861	6,620	$38,065	1903	93,026	$265,383
1862	23,400	134,550	1904	79,062	376,494
1863	43,200	248,400	1905	46,500	144,500
1864	50,700	291,525	1906	24,850	61,600
1865	60,530	348,048	1907	23,734	55,849
1866	84,020	483,115	1908	18,496	55,503
1867	124,690	716,968	1909	49,389	216,913
1868	143,676	826,137	1910	11,033	23,484
1869	157,234	904,096	1911	11,047	18,297
1870	141,890	815,868	1912	14,484	39,092
1871	152,493	876,835	1913	25,198	85,809
1872	190,859	1,097,439	1914	11,859	28,806
1873	186,611	1,073,013	1915	10,299	26,662
1874	215,352	1,238,274	1916	4,037	7,030
1875	166,638	958,169	1917	3,527	7,691
1876	128,049	736,282	1918	6,343	16,149
1877	107,789	619,787	1919	2,983	8,203
1878	134,237	771,863	1920	2,078	5,450
1879	147,879	850,304	1921	12,467	63,578
1880	236,950	1,362,463	1922	27,020	135,100
1881	140,000	805,000	1923	1,010	5,090
1882	112,592	647,404	1924	1,425	8,800
1883	76,162	380,810	1925	730	3,880
1884	77,485	309,950	1926	1,100	5,000
1885	71,615	286,460	1927	200	1,100
1886	100,000	300,000	1928	782	4,542
1887	50,000	150,000	1929	450	2,476
1888	95,000	380,000	1930	10,885	59,858
1889	121,280	288,232	1931	12,551	77,607
1890	110,711	283,019	1932	9,508	36,468
1891	93,301	204,902	1933	2,612	11,367
1892	85,178	209,711	1934	13,549	52,720
1893	72,603	167,555	1935	8,049	32,745
1894	59,887	139,862	1936	370	1,815
1895	79,858	193,790	1937	269	2,933
1896	70,649	161,335	1938	275	1,650
1897	87,449	196,255	1939	1,750	8,100
1898	143,045	337,475	1940		
1899	160,941	420,109	1941	190	1,046
1900	176,956	535,531	1942		
1901	150,724	401,772			
1902	88,460	248,622	Totals	5,269,790	$23,397,785

The tonnages in the above table for the years 1861-1866 (incl.) are taken from the U. S. Geological Survey, "Mineral Resources of the U. S., 1910," p. 107. The values assigned for the years previous to 1883 are those given by W. A. Goodyear (Mineral Res., 1882, pp. 93-94), being an average of $5.75 per ton. From 1887 to date the figures are those of the California State Mining Bureau.

* Annual details concealed under 'Unapportioned.'

NATURAL GAS

Bibliography: State Mineralogist Reports VII, X, XII, XIII, XIV, XXIX, XXXVII. Bulletins 3, 16, 19, 69, 73, 89, 118. Summary Oil and Gas Supervisor, Dec., 1919; Aug., 1922; Mar., 1923; Mar. and Apr., 1926.

Statistics on the production of natural gas in California are in a considerable degree difficult to arrive at, as much of it that is utilized directly at the wells for heating, lighting, and driving gas engines is not measured. Hence, it is necessary to approximate the output of many of the operators in the oil fields, estimated on the number of lights, and on the number and horsepower of gas engines and steam boilers thus operated. The figures here given are for gas utilized locally and also that sold for distribution to consumers; and we consider are not overestimated, particularly in the seven oil-producing counties. It must be remembered that some of our important oil fields are removed many miles from the site of any other industry, and that the gathering of small amounts of gas and transporting it for any considerable distance may

Generated on 2024-09-24 15:59 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

not always be profitable, nor is it often possible to have pipe-line facilities available to handle the gas accompanying the early gas production in newly developed fields. Wherever feasible, casing-head gas is used in driving gas engines for pumping and drilling, and in firing the boilers of steam-driven plants.

Production and Value

There is a rather wide variation in prices quoted for natural gas because a considerable part is used directly in the field for driving gas engines and firing boilers, and is therefore not measured nor sold. Such companies as have placed a valuation on the gas that was thus used in 1942 gave from 1.7¢ to 25¢ per 1000 cu. ft. at the well. From the totals shown in the tabulation following herein, the average value for all fields in 1942 works out at approximately 6.22¢ per M cu. ft. Approximately 7000 cu. ft. of gas is equal to one barrel of oil in heating value, and is so accounted for by many operators. In driving gas engines, about 4000 cu. ft. per 24 hr. are consumed by a 25-h.p. engine, and 63,700 cu. ft. per day for heating a 70-h.p. steam boiler, which figures have been utilized in compiling this report, in those cases where gas was not metered.

Utilized Production of Natural Gas in California, 1942

County	M cubic feet	Value
Fresno	59,828,203	$2,946,323
Kern	70,890,547	3,431,558
Kings	37,266,063	1,821,000
Los Angeles	91,719,975	6,186,796
Orange	19,347,357	1,293,338
Sacramento	49,172,104	3,937,671
San Joaquin	11,892,675	839,502
Santa Barbara	2,663,010	224,275
Solano	29,691,001	2,622,523
Ventura	37,911,597	2,180,252
Butte, Humboldt, Lake, Mendocino, Sonoma, Stanislaus, Sutter, Tulare, and Yolo*	2,861,410	214,814
Totals	413,180,942	$25,698,052

* Combined to conceal output of individual operators in each.

The above figures of 413,180,942 M cubic feet of natural gas utilized and valued at $25,698,052 are an increase in both amount and value for 1942 output over that of 1941, which was 378,173,737 M cubic feet worth $21,522,445. As for several years past, Los Angeles County led all others in the yield of natural gas utilized during 1942, followed in turn by Kern, Fresno, Sacramento, Ventura counties.

The gas utilized coming from Kings, Orange, Sacramento, San Joaquin, Solano registered an increase in amount and value over the previous year; while that from Fresno, Kern, Los Angeles, Santa Barbara, and Ventura show a decrease.

Natural Gas Production in California Since 1888

The production of natural gas in California by years since 1888 is given in the following table. The first economic use of natural gas in California was from the famous courthouse well at Stockton, bored in 1854-1858. Beginning about 1883 and for several succeeding years, a number of gas wells were brought in around Stockton, and later at

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Sacramento. Natural gas was known in a number of other localities, and occasionally utilized in a small way, notably at Kelseyville in Lake County, and in Humboldt County near Petrolia and Eureka, but there are no available authentic records of amounts or values previous to the year 1888. The most important developments in the commercial production of natural gas have been coincident with developments in the oil fields, by utilizing the casing-head gas as well as that from dry-gas wells.

Natural Gas Production in California Since 1888

Year	M cubic feet	Value	Year	M cubic feet	Value
1888	[a]12,000	$10,000	1916	28,134,365	$2,871,751
1889	[a]14,500	12,680	1917	44,343,020	2,964,922
1890	[a]41,250	33,000	1918	46,373,052	3,289,524
1891	[a]39,000	30,000	1919	52,173,503	4,041,217
1892	[a]75,000	55,000	1920	58,567,772	3,898,286
1893	[a]84,000	68,500	1921	67,043,797	4,704,678
1894	[a]85,000	75,000	1922	103,628,027	6,990,030
1895	[a][b]110,000	100,000	1923	240,405,397	15,661,433
1896	[a][b]131,000	110,157	1924	209,021,596	15,153,140
1897	[a]71,300	62,657	1925	194,719,924	15,890,082
1898	[a]111,165	74,424	1926	214,549,477	19,465,347
1899	115,110	95,000	1927	224,686,940	20,447,294
1900	40,566	34,578	1928	260,887,116	22,260,947
1901	120,800	92,034	1929	400,129,201	29,675,546
1902	120,968	99,443	1930	315,513,952	24,559,840
1903	120,134	75,237	1931	344,959,920	16,690,695
1904	144,437	91,035	1932	284,168,872	16,272,061
1905	148,345	102,479	1933	271,743,544	15,403,514
1906	168,175	109,489	1934	263,207,517	14,408,761
1907	169,991	114,759	1935	302,447,193	17,680,661
1908	842,883	474,584	1936	298,922,708	18,585,970
1909	1,148,467	616,932	1937	323,883,714	19,859,865
1910	10,579,933	1,676,367	1938	332,358,439	22,310,755
1911	[a]5,000,000	491,859	1939	340,754,804	21,551,646
1912	[a]12,600,000	940,076	1940	352,871,945	20,618,983
1913	14,210,836	1,053,292	1941	378,173,737	21,522,445
1914	16,529,963	1,049,470	1942	413,180,942	25,698,052
1915	21,992,892	1,706,480	Totals	6,052,578,189	$431,932,007

[a] Quantity, in part, estimated, where values only were reported.
[b] Tabulations published previously to 1933 included values of CO_2, now shown under "Industrial Materials."

Gasoline from Natural Gas

More or less gas usually accompanies the petroleum in the old fields, and such gas carries varying amounts of gasoline. A total of 87 plants were in operation in 1942 recovering gasoline by compression or absorption from this 'casing-head' gas. After the gasoline is extracted the remaining 'dry gas' so far as practicable is taken into pipe lines, by which it is distributed to consumers, both domestic and commercial.

During the year 1942 a total of 415,624,450 gallons of natural gas gasoline valued at $22,374,692 was reported from all fields by 87 plants as compared with 534,962,919 gallons worth $24,228,808 from 88 plants in 1941. In 1942 a total of 79,421,748 gallons of liquefied petroleum gas was shipped in California, as compared with 68,930,472 gallons for the previous year. The 1942 output was distributed by counties as follows:

Generated on 2024-09-24 16:03 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Natural Gas Gasoline for 1942

County	Gallons	Value	Liquefied natural gas gallons
Fresno	41,401,269	$1,737,511	34,065,756
Kings	32,873,718	1,408,213	
Kern	69,737,745	2,641,747	19,994,041
Los Angeles	156,273,042	11,598,193	9,044,049
Orange	46,452,262	2,048,105	4,854,484
Santa Barbara	7,941,197	338,847	1,413,988
Ventura	60,945,217	2,602,076	10,049,430
Totals	415,624,450	$22,374,692	79,421,748

The usual recoveries of gasoline from natural gas vary from ½ gal. to 3 gal. per 1000 cu. ft. of gas handled, the average being about 1 gal. per 1000 cu. ft. The U. S. Bureau of Mines Report by Knudsen [1] gives the average recovery for 1942 as 1.585 gallons per 1000 cu. ft. of gas treated. His figures show the following production by methods:

	M cubic feet natural gas treated	Gallons of gasoline recovered	Recovery gallons per M cubic feet
Oil absorption	344,122,011	545,465,776	1.585

PETROLEUM

Bibliography: State Mineralogist Reports IV, VII, X, XII, XIII, XXIX, XXXI, XXXIII-XXXV, XXXVII. Bulletins 3, 11, 16, 19, 31, 32, 63, 69, 73, 82, 84, 89, 118. Reports of Oil and Gas Supervisor 1915 to date (issued in monthly chapters since April, 1919, to June, 1929, and quarterly from then on). U. S. Geol. Surv. Bulletins 213, 285, 309, 317, 321, 322, 340, 357, 398, 406, 431, 471, 541, 581, 603, 621, 623, 653, 691. Prof. Papers 116, 117. "American Petroleum; Supply and Demand"; Amer. Petr. Inst., 1925.

The crude petroleum produced in California during 1942 amounted to a total of 247,491,289 barrels having a value of $242,481,545 at the well. This was an increase in both amount and value compared with the 1941 output, which was 229,664,784 barrels worth $218,838,171.

This total of quantity is compiled from the monthly production reports filed by the operators with the State Oil and Gas Supervisor.

The question of the value of the crude oil yield at the well is a difficult one to settle with exactitude principally because a large part of the output is not sold until after refining. The large refiners are also large producers of crude oil which they send direct from well to plant, hence much of the crude oil is not sold as such.

The value used in the statistical reports of the State Mining Bureau and the Division of Mines from 1914 to 1927 (inc.) was derived from an average of actual sales of crude oil of all grades in each field of the State and their average applied to the total yield of each respective field. The 1929-1933 values, used by the Division of Mines, were

[1] Knudsen, E. T., The Petroleum Situation in the Pacific Coast Territory (Monthly for 1942), U. S. Bureau of Mines.

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

obtained by using the production of crude oil by gravities produced in each field and applying an average of current price quotations for crude oil at the well as compiled by California Oil and Gas Association.

The values given to the 1934-1942 petroleum output by this department were obtained by using the average gravity oil for each field, to which was applied the average quotation for the year of said grade oil.

TABLE A

Production and Value of Crude Oil by Counties

County	1941		1942	
	Barrels	Value	Barrels	Value
Fresno	20,302,492	$19,560,723	23,959,303	$21,206,580
Kern	65,628,935	57,607,724	72,093,741	64,477,255
Kings	7,789,574	9,479,813	8,906,011	11,131,160
Los Angeles	86,550,854	87,264,337	87,248,536	90,620,837
Orange	19,962,737	17,987,662	24,122,716	25,459,382
Santa Barbara	11,963,579	7,701,836	13,267,311	9,407,096
Ventura	17,431,322	19,218,681	17,853,644	20,148,305
Sacramento, San Luis Obispo, San Mateo, Santa Clara, Tulare*	35,291	17,395		
San Bernardino, San Luis Obispo, Santa Clara, Tulare*			39,027	30,930
Totals	229,664,784	$218,838,171	247,491,289	$242,481,545

* Combined to conceal the output of operators in each.

The foregoing totals show an average price of $0.980 per barrel for the year 1942, as compared with $0.953 in 1941, $0.929 in 1940, $1.009 in 1939, $1.038 in 1938, $0.997 in 1937, $0.986 in 1936, $0.870 in 1935, and $0.913 in 1934.

TABLE B

Average Price of Oil per Barrel, by Counties, 1933-1942

County	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
Fresno	$0.573	$0.650	$0.941	$1.209	$1.255	$1.261	$1.173	$1.068	$0.963	$0.885
Kern	.665	.729	.729	.863	.886	.890	.826	.838	.878	0.894
Kings	.934	1.085	1.045	1.338	1.390	1.390	1.430	1.262	1.217	1.250
Los Angeles	.892	.990	.914	.974	.968	1.064	1.064	.941	1.008	1.039
Orange	.827	.937	.898	.937	.945	.956	.952	.900	.901	1.055
San Luis Obispo										
Santa Barbara	.848	.951	.924	1.143	1.083	.974	.830	.620	.644	0.709
Santa Clara										
Ventura	.838	.944	.901	.971	1.050	1.102	1.090	1.087	1.102	1.129
State averages	$0.831	$0.913	$0.970	$0.986	$0.997	$1.038	$1.009	$0.929	$0.953	$0.980

For several years previous to 1919, the State average value per barrel at the well for crude oil as determined by the statistical returns was noted to practically coincide with the quotations during the same years for 23° gravity oil in the San Joaquin Valley fields. In 1919 and since, the average values have worked out at figures corresponding to quotations up to, in one year as high as 28° oil, due to the large yield of high-gravity oils from the new fields in the Los Angeles-Orange counties area.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

TOTAL PETROLEUM PRODUCTION OF CALIFORNIA

The presence of oil seepages and springs in Los Angeles and Ventura counties was known and utilized in a small way early in the history of California. Some also was shipped to refineries at San Francisco from Santa Barbara and Humboldt counties. In the light of present-day developments, the following reference to the previous year's production of oil and its future prospects as expressed by the San Francisco Bulletin of January 8, 1866, is strikingly prophetic even though skeptical:

"It is possible that the small quantity received (40,000 or 50,000 gallons in 1865) may be the forerunner of many millions which will, at some future time, lubricate the wheels of commerce and set a trade at work excelling in variety any that has thus far been known on this coast. At present, however, we admit to being a little skeptical about the assumption of the astute Professor Silliman that California will be found to have more oil in its soil than all the whales in the Pacific Ocean."

According to Hanks,[1] in 1874 production amounted to 36 bbl. per day from natural flows in Pico Cañon (Newhall), and at Sulphur Mountain (Ventura County), the oil being of 32° gravity average.

"Work was commenced in Pico Canyon in 1875 by drilling three shallow wells with spring pole, all of which yielded oil at depths of from 90 to 250 feet. Actual work of development commenced with steam machinery in 1877."[2]

In 1877 Pico averaged 40-50 bbl. daily, and Ventura 80 bbl. daily. In 1878, there was some production (at 60 bbl. per day, for a time) from wells in Moody Gulch, near Los Gatos, Santa Clara County, the oil being of 46° Baumé.

The first wells in the Coalinga, Fresno County, and Summerland, Santa Barbara County, fields were drilled in 1890, but Coalinga did not make its influence felt conspicuously on the state's annual output until 1903. The Summerland yield never has been large. The Salt Lake field near Los Angeles began production in 1894 and in 1897 reached over a million barrels annually.

In the Kern County fields, the first well was drilled in Sunset in 1891, Midway in 1900, McKittrick in 1892, Kern River in 1899. The Sunset-Midway district attained a yield of over 4,000,000 bbl. in 1909, and over 20,000,000 bbl. in 1910. Kern River field produced over 3,000,000 bbl. in 1901.

The first well in the Santa Maria-Lompoc group, Santa Barbara County, was drilled in 1901, and the district advanced to a yield of over 3,000,000 bbl. annually in 1905.

The Whittier-Fullerton field in Los Angeles and Orange counties became an important factor in 1902. The Montebello field, Los Angeles County, was the conspicuous addition in 1918-1919; and Elk Hills, Kern County, with Huntington Beach and Richfield, Orange County, in 1920. In 1921, the new fields added were Long Beach and Santa Fe Springs, Los Angeles County; in 1922, Torrance field in Los Angeles County, and Wheeler Ridge field in Kern County; but the production from the large number of new wells started in these new Los Angeles County fields did not reach its peak until August and September, 1923. Dominguez (Compton) came in during 1923; followed by Rosecrans and Inglewood in 1924. Ventura recorded important additions to its

[1] Hanks, Henry G., Report IV of State Mineralogist, p. 298, 1884.
[2] *Idem.* p. 301.

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

producing area in 1925 and 1926. Seal Beach, Orange County, and Mt. Poso, Kern County, were the new fields added in 1926; Round Mountain, Kern County, and Rincon, Ventura County, were the new fields added in 1927; with Potrero in Los Angeles County, Elwood in Santa Barbara County and Kettleman Hills in Kings County in 1928.

During 1929 Playa del Rey was added to the oil fields in Los Angeles County, and more recently a number of others have been added in Fresno, Los Angeles, Kern, and Santa Barbara.

The effect of the advent of these various fields to the producing column will be noted in the tabulation herewith, by years:

TABLE C

Total Petroleum Production in California

Year	Barrels	Value	Year	Barrels	Value
To and including 1875	[a]175,000	[b]$472,500	1910	77,697,568	$37,689,542
1876	12,000	30,000	1911	84,648,157	40,552,088
1877	13,000	29,250	1912	89,689,250	41,868,344
1878	15,227	30,454	1913	98,494,532	48,578,014
1879	19,858	39,716	1914	102,881,907	47,487,109
1880	40,552	60,828	1915	91,146,620	43,503,837
1881	99,862	124,828	1916	90,262,557	57,421,334
1882	128,636	257,272	1917	95,396,309	86,976,209
1883	142,857	285,714	1918	99,731,177	127,459,221
1884	262,000	655,000	1919	101,182,962	142,610,563
1885	325,000	750,750	1920	103,377,361.	178,394,937
1886	[a]377,145	[b]870,205	1921	112,599,860	203,138,225
1887	678,572	1,357,144	1922	138,468,222	173,381,265
1888	690,333	1,380,666	1923	262,875,690	242,731,309
1889	303,220	368,048	1924	228,933,471	274,652,874
1890	307,360	384,200	1925	232,492,147	330,609,829
1891	323,600	401,264	1926	224,673,281	345,546,677
1892	385,049	561,333	1927	231,195,774	260,735,498
1893	470,179	608,092	1928	231,811,465	229,998,680
1894	783,078	1,064,521	1929	292,534,221	321,366,863
1895	1,245,339	1,000,235	1930	227,328,988	271,699,046
1896	1,257,780	1,180,793	1931	188,310,605	141,835,723
1897	1,911,569	1,918,269	1932	177,745,286	142,890,247
1898	2,249,088	2,376,420	1933	172,139,362	143,063,972
1899	2,677,875	2,660,793	1934	174,721,282	159,529,671
1900	4,319,950	4,152,928	1935	205,979,855	179,335,311
1901	7,710,315	2,961,102	1936	214,776,227	211,667,185
1902	14,356,910	4,692,189	1937	238,558,562	237,845,872
1903	24,340,839	7,313,271	1938	249,395,763	258,354,343
1904	29,736,003	8,317,809	1939	224,253,110	226,358,856
1905	34,275,701	9,007,820	1940	223,294,805	207,479,800
1906	32,624,000	9,238,020	1941	229,664,784	218,838,171
1907	40,311,171	16,783,943	1942	247,491,289	242,481,545
1908	48,306,910	26,566,181			
1909	58,191,723	32,398,187	Totals	6,072,820,150	$6,016,380,905

[a] U. S. G. S., Min. Res. of U. S., 1886, p. 440, for quantities to and including 1886.

[b] Values have been estimated for the years to and including 1886, after consulting a number of contemporaneous publications, including the Mining & Scientific Press, Reports of the State Mineralogist, and U. S. Reports. The figures for 1887 to date are from records of the State Mining Bureau.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Well Data:

The following table is compiled from monthly statements issued by the American Petroleum Institute:

TABLE D

Wells Operated, by Fields, 1942

Field	Wells producing Dec., 1941	Wells producing Dec., 1942	Wells completed during year	Daily initial output	Wells abandoned during year	Bbls. per well produced per day Dec., 1941	Bbls. per well produced per day Dec., 1942
GROUP No. 1:							
Antelope Plains	----------	10	11	3,068	----------	----------	130.9
Arvin	14	12	1	80	1	47.6	36.3
Belridge—North	48	73	4	1,544	2	144.8	82.9
Belridge—South	207	303	86	4,597	----------	10.3	14.7
Canal	35	37	1	498	----------	121.9	109.5
Canfield Ranch	1	1	----------	----------	----------	42.0	54.0
Coalinga—East	1,047	459	19	2,914	3	40.6	37.3
Coalinga—North		213	14	24,400	----------		248.5
Coalinga—West		658	10	404	13		8.8
Coles Levee	108	123	14	19,042	1	144.6	185.8
Dyer Creek	----------	1	----------	----------	1	----------	58.0
Edison	111	112	3	282	3	10.3	23.9
Elk Hills	143	212	6	2,397	1	45.8	60.5
Fruitvale	173	174	3	255	5	33.5	36.8
Greeley	68	78	10	17,011	1	121.9	144.4
Helm	1	6	8	2,174	----------	68.0	99.3
Jacalitos	1	6	5	720	2	4.0	44.2
Kern River	1,953	2,353	25	1,964	15	7.1	6.9
Kettleman North Dome	283	260	14	6,802	1	122.5	165.0
Lost Hills	370	369	3	246	4	9.8	10.1
McKittrick	220	270	2	72	5	19.9	17.1
Midway-Sunset	2,755	3,210	62	4,594	30	17.6	17.7
Mountain View	164	164	----------	----------	1	30.2	23.7
Mount Poso	356	413	26	2,640	6	38.8	53.2
Paloma	2	2	3	708	----------	344.0	392.5
Raisin City	6	9	6	1,323	2	114.3	119.4
Rio Bravo	96	96	2	2,820	1	138.3	138.1
Riverdale	1	12	11	3,473	1	----------	68.4
Round Mountain	236	250	11	1,555	10	32.3	42.6
Shafter	1	2	1	104	----------	37.0	36.0
Strand—East	----------	1	1	1,992	----------	----------	193.0
Strand—West	12	13	1	656	----------	130.1	120.2
Ten Section	112	120	5	4,019	----------	140.6	172.6
Union Avenue	2	3	2	95	----------	87.5	25.3
Wasco	13	13	----------	----------	----------	12.7	137.9
Wheeler Ridge	34	34	----------	----------	----------	7.9	7.7
GROUP No 2—Aliso Canyon	----------	18	4	397	1	----------	106.2
Capitan	51	52	----------	----------	----------	32.1	61.8
Del Valle	----------	11	2	689	----------	----------	93.7
Elwood	59	54	----------	----------	----------	53.2	70.4
Gate Ridge	----------	18	3	1,105	----------	----------	210.2
Newhall-Potrero	----------	33	7	5,699	----------	----------	169.4
Oak Canyon	----------	6	2	1,046	1	----------	112.3
Padre Canyon	----------	18	----------	----------	----------	----------	56.5
Rincon	69	68	----------	----------	1	45.2	49.6
San Martinez	----------	10	6	4,976	1	----------	105.1
San Miguelito	42	26	3	2,358	----------	80.4	174.7
Santa Barbara	17	16	----------	----------	1	10.1	10.3
Santa Maria	205	262	6	4,979	9	43.5	38.6
Santa Maria Valley	199	230	29	16,983	6	91.8	37.0
Summerland	8	5	----------	----------	1	1.8	3.2
Ventura Avenue	322	402	16	18,412	1	111.0	105.7
Ventura-Newhall	568	524	7	850	26	22.8	9.0
Watsonville	7	7	----------	----------	----------	3.6	3.6
GROUP No 3—Brea-Olinda	367	404	4	805	----------	15.8	29.3
Buena Park	----------	2	2	522	2	----------	99.5
Coyote—East	93	128	4	521	3	43.3	48.6
Coyote—West	77	110	2	1,687	----------	114.1	111.1
Dominguez	281	295	4	1,208	4	82.1	88.8
El Segundo	36	35	----------	----------	3	36.7	30.5
Huntington Beach	590	653	21	5,665	23	47.8	52.3
Inglewood	208	280	4	3,981	2	73.9	96.5
Lawndale	3	3	----------	----------	----------	9.0	9.0
Long Beach	1,197	1,134	1	120	81	32.1	29.9

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

TABLE D—Continued

Wells Operated, by Fields, 1942

Field	Wells producing Dec., 1941	Wells producing Dec., 1942	Wells completed during year	Daily initial output	Wells abandoned during year	Bbls. per well produced per day Dec., 1941	Bbls. per well produced per day Dec., 1942
GROUP No. 3—Continued							
Los Angeles-Salt Lake	98	99			2	5.5	5.5
Montebello	342	354	4	410	39	33.2	32.8
Playa Del Rey	136	118			19	25.2	24.2
Potrero	22	25	1	325	1	68.0	38.7
Richfield	310	307			17	27.0	24.3
Rosecrans	179	182	4	898	7	44.7	39.1
Santa Fe Springs	579	568	1	48	23	38.6	51.9
Seal Beach	116	133	1	209	5	60.3	61.7
Torrance	613	619	11	1,194	41	14.1	12.5
Turnbull Canyon	1	4	3	1,652		142.0	107.0
Whittier	155	159	1		2	6.3	7.0
Wilmington	1,073	1,100	38	9,305		81.6	86.0
Yorba Linda		5	4	820			112.6
Miscellaneous drilling					138		
GROUP No. 4—GAS FIELDS:							
Bowerbank			1	Gas	1		
Buena Vista Lake	5	2					
Buttonwillow	18	18					
Chowchilla							
Delano	15	19	2	Gas	1		
Fairfield Knolls	2	1					
Goleta	5	4					
Marysville Buttes	3	4	1	Gas			
McDonald Island	6	7					
Rio Vista	36	52	11	Gas	2		
Roberts Island							
Semi-Tropic	3	3	1	Gas	1		
Tompkins Hill		2					
Tracy	4	3	1	Gas			
Vernalis							
Totals	16,693	18,664	582	199,313	574	40.1	36.7

Specific Gravity of Oils Produced

The proportion of heavy and light oil produced in the various fields is shown in Table E, following, for which we are indebted to the Standard Oil Company. Specific gravities in California range from 8° Baumé in the Casmalia field, Santa Barbara County, to 60° in Kettleman Hills, Kings County.

California crude oils are all essentially of asphalt base, with a few notable exceptions. In the following localities are wells yielding crudes containing both asphalt and paraffine constituents: Oil City field, Coalinga; a few deep wells in East Side field, Coalinga; a considerable part of the Ventura County field; Western Minerals area, south of Maricopa; Wheeler Ridge, Kern County.

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

TABLE E

Production of Light and Heavy Oils, by Fields, for 1942

Field	Under 20° (barrels)	20° and above (barrels)	Total (barrels)
San Joaquin Valley—			
Arvin		199,882	199,882
Belridge—North	96,952	1,938,478	2,035,430
Belridge—South	542,379	399,736	942,115
Canal		1,068,978	1,068,978
Canfield Ranch		12,880	12,880
Coalinga (East and West)	2,719,922	4,634,748	7,354,670
Coalinga (Eocene)		11,895,363	11,895,363
Coles Levee		5,434,615	5,434,615
Devil's Den	5,716		5,716
Deyer Creek	14,818		14,818
Edison	660,147	349,365	1,009,512
Elk Hills	586,446	3,775,989	4,362,435
Fruitvale	425,982	1,847,495	2,273,477
Grapevine		5,392	5,392
Greeley		2,594,347	2,594,347
Helm		79,344	79,344
Jacalitas		57,140	57,140
Kern River	5,157,793		5,157,793
Kettleman Hills (North Dome)		13,008,817	13,008,817
Lost Hills	834,013	553,056	1,387,069
McKittrick	1,791,007	4,608	1,795,615
Midway-Sunset	9,238,860	11,182,653	20,421,513
Mount Poso	7,431,864		7,431,864
Mountain View	15,460	1,587,000	1,602,460
Paloma		272,635	272,635
Panoche Creek		2,067	2,067
Poso Creek	575,974		575,974
Raisin City		305,800	305,800
Rio Bravo		3,545,519	3,545,519
Riverdale		94,786	94,786
Round Mountain	3,783,862	107,670	3,891,532
Strand		428,240	428,240
Ten Sections		4,804,809	4,804,809
Union Avenue	63,968	1,583	65,551
Wasco		472,062	472,062
Wheatville		2,234	2,234
Wheeler Ridge		98,684	98,684
Coastal—			
Aliso Canyon		713,393	713,393
Arroyo Grande	5,144		5,144
Capital		842,756	842,756
Del Valle		273,148	273,148
Elwood		873,290	873,290
Lompoc	403,870	19,199	423,069
Newhall	2,845	27,215	30,060
Newhall-Potrero		1,300,773	1,300,773
Oak Canyon		151,744	151,744
Santa Barbara Mesa	59,364		59,364
Rincon		1,011,297	1,011,297
San Martinez		236,942	236,942
San Miguelito		1,591,004	1,591,004
Santa Maria	2,348,045	1,165,837	3,513,882
Santa Maria Valley	7,535,403		7,535,403
Summerland	5,352		5,352
Ventura Avenue		13,634,828	13,634,828
Ventura County	242,914	1,455,409	1,698,323
Watsonville	9,420		9,420

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

TABLE E—Continued

Production of Light and Heavy Oils, by Fields, for 1942

Field	Under 20° (barrels)	20° and above (barrels)	Total (barrels)
Southern California—			
Brea-Olinda	292,877	3,482,047	3,774,924
Buena Park		38,661	38,661
Coyote—East	57,345	2,003,527	2,060,872
Coyote—West		3,784,038	3,784,038
Dominguez		7,931,131	7,931,131
El Segundo	108,200	319,759	427,959
Huntington Beach	615,375	11,472,544	12,087,919
Inglewood	570,650	6,179,755	6,750,405
Lawndale		9,784	9,784
Long Beach	157,310	12,907,373	13,064,683
Los Angeles	67,993		67,993
Montebello	12,201	3,940,807	3,953,008
Playa Del Rey	90,940	1,129,052	1,219,992
Potrero		314,600	314,600
Richfield	600,261	2,281,072	2,881,333
Rosecrans		2,716,153	2,716,153
Salt Lake	125,466		125,466
Santa Fe Springs		7,757,649	7,757,649
Seal Beach		3,023,497	3,023,497
Torrance	1,617,142	1,422,473	3,039,615
Turnbull Canon		97,660	97,660
Whittier	278,197	107,801	385,998
Wilmington	10,017,349	23,616,293	33,633,642
Totals	59,168,826	188,598,486	247,767,312

Oil in "Storage"

Field, refinery, pipe-line and tank-farm stocks of crude and refined products in the Pacific Coast [1] territory totaled 125,465,486 barrels on December 31, 1942, as compared with 137,683,332 barrels on December 31, 1941, with a total decrease in stock from the preceding year of 12,217,846 barrels. Table F gives a breakdown of stocks as of December 31, 1941 compared with December 31, 1942.

TABLE F

	Dec. 31, 1941 (barrels)	Dec. 31, 1942 (barrels)
1. Gasoline-bearing crude	35,633,402	32,634,698
2. Non-gasoline-bearing crude	10,179,443	10,823,494
3. Unblended natural gasoline	1,797,776	1,036,643
4. Gasoline (exc. distributing and service stations)	14,796,061	14,006,582
5. Naphtha distillates[a]	2,516,505	3,583,468
6. Gas oil and diesel oil	12,743,312	12,234,123
7. Fuel oil residuum	53,221,648	44,306,730
8. All other stocks[b]	6,796,185	5,896,735
Totals	137,683,332	125,465,486
[a] Estimated amount of unfinished gasoline in No. 5	2,189,437	3,197,463
[b] Coke included in Item No. 8	44,274	111,317

[1] American Petroleum Institute: Summary of California Oilfield Operations for December, 1942.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Utilization of California Crude Oil

Most of the crude oil produced in California is sent to storage reservoirs at tank farms near the oil fields and from these reservoirs by pipe lines to the refineries, the larger ones of which are located in the vicinity of Los Angeles and on San Francisco Bay.

During 1942 the crude oil consumed in California according to the U. S. Bureau of Mines [1] was 219,248,000 barrels sent to stills at the refinery; 10,916,000 barrels used for cracking; 16,895,000 barrels either consumed as fuel or added to residuum; and there were no shipments of crude out of the State as such; also stocks were depleted by 2,135,000 barrels compared with 1941 when 207,204,000 barrels were sent to the stills; 5,929,000 barrels were used for cracking; 10,858,000 barrels either used as fuel or added to residuum; and stocks were depleted by 1,831,000 barrels from the previous year.

The production of petroleum products during 1941 and 1942 is shown in Table G:

TABLE G

Commodity	1941 Amount in barrels	1942 Amount in barrels
Crude petroleum to stills	207,204,000	219,248,000
Crude used for cracking	5,929,000	10,916,000
Natural gas gasoline	13,810,000	12,989,000
Gasoline and naphtha distillates	86,392,000	86,476,000
Kerosene	2,695,000	2,776,000
Lubricating oil and greases	3,978,000	2,905,000
Gas oil and diesel oil	31,721,000	31,733,000
Residuum and non-gasoline-bearing crude (fuel oil) [a]	83,150,000	95,980,000
Asphalt and road oil	8,371,000	11,915,000
Totals [b]	221,014,000	243,153,000
[a] Includes heavy non-gasoline crude oil	10,858,000	16,895,000
[b] Totals of crude oil and natural gasoline.		

Operating Data

The following tabulation (Table H) is compiled from data published by the State Division of Oil and Gas,[2] semiannually, and here combined to show the entire year's operations for all fields. The districts are the geographical subdivisions as administered by that Division and which are outlined on the accompanying map.

It will be noted that the state average yield of oil per-well-per-day was 61.4 barrels for the first six months of 1942 and 71.6 barrels for the second. This is somewhat higher than the figures 36.7 barrels average for December derived from American Petroleum Institute data as shown in Table D, on a previous page, due in part at least, to the fact that the latter is on a full-time basis, whereas the Division's figures allow for shut-down time.

[1] Knudsen, E. T., The petroleum situation in the Pacific Coast territory (monthly) 1942, U. S. Bureau of Mines.

[2] Summary of Operations—California Oil Fields; Division of Oil and Gas, Fifteenth Annual Report of State Oil and Gas Supervisor, Vol. 28, No. 1, Jan.-June, 1942, and No. 2, July-Dec. 1942.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

TABLE H

Production Statistics and Operating Data of California Oil Fields—1942

Field	January 1 to June 30				July 1 to December 31				
	Average number of producing wells—actual	Oil (bbls.)	Production per well per day (bbls.)	Percentage of time wells produced	Average number of producing wells—actual	Oil (bbls.)	Production per well per day (bbls.)	Percentage of time wells produced	Cumulative production of oil (bbls.) to end 1942
DIST. 1—Aliso Canyon	16	342,036	205.8	57.4	18	372,578	219.7	51.2	2,423,594
Beverly Hills	3	20,950	39.2	98.5	3	22,273	44.8	90.0	4,429,026
Brea-Olinda	384	1,618,165	25.8	90.3	392	2,148,440	31.2	95.3	172,354,579
Coyote, East	134	942,392	42.8	90.8	148	1,277,009	49.2	95.3	- 47,180,263
Coyote, West	105	1,677,334	109.6	80.5	115	2,105,346	110.7	89.9	129,197,619
Del Valle	15	218,247	103.2	77.9	17	297,690	113.4	84.0	1,242,118
Dominguez	278	3,477,115	83.0	83.3	295	4,457,908	87.5	93.9	138,621,340
El Segundo	34	215,115	35.0	99.8	35	207,983	33.9	95.4	10,588,487
Huntington Beach	657	5,275,793	49.2	90.2	679	6,724,326	56.8	94.8	312,789,496
Inglewood	272	3,201,600	76.9	84.6	278	3,543,667	76.5	90.6	133,075,552
Lawndale	3	4,690	9.3	92.8	3	4,864	9.8	90.0	1,114,562
Long Beach	1,213	6,581,206	31.0	96.5	1,199	6,379,721	29.7	97.2	674,371,113
Los Angeles City	91	38,475	2.4	97.3	90	37,250	2.3	96.7	54,252,476
Montebello	340	1,879,773	33.3	91.7	348	2,055,115	33.9	94.6	131,076,496
Newhall	13	12,884	5.8	94.1	12	12,961	6.7	87.2	1,861,096
Newhall-Potrero	25	533,905	129.7	90.9	28	774,198	180.0	83.5	3,616,572
Oak Canyon	4	62,926	95.1	91.4	5	90,054	120.4	81.3	198,572
Playa del Rey	138	614,987	25.6	96.4	132	575,399	24.5	96.6	47,014,481
Potrero	24	176,755	45.0	90.3	23	142,590	34.3	98.1	4,436,581
Richfield	307	1,368,669	25.7	95.9	308	1,371,555	25.0	96.7	97,849,769
Rosecrans	184	1,379,456	43.2	95.8	186	1,308,694	39.4	97.1	51,261,376
Salt Lake	8	43,498	31.5	95.2	8	44,409	31.1	96.9	7,527,418
Santa Fe Springs	578	3,797,277	38.5	94.2	575	3,945,711	39.0	95.7	485,420,762
Seal Beach	132	1,453,456	70.6	86.1	131	1,568,229	68.6	94.8	92,776,091
Torrance	633	1,556,610	14.1	96.3	622	1,484,079	13.6	95.4	106,029,922
Whittier	150	178,520	7.0	93.7	158	193,639	7.2	93.1	19,385,513
Wilmington	1,086	16,045,898	84.7	96.4	1,089	17,332,783	89.3	96.8	174,176,762
Los Angeles County	4	43,795	70.3	86.0	5	74,593	87.9	92.3	195,872
Orange County	1	4,573	46.2	54.7	2	34,088	144.4	64.1	38,661
San Bernardino County					1	400	40.0	5.4	15,381
Totals	6,832	52,766,100	45.8	93.2	6,905	58,587,552	48.4	95.3	2,904,521,550
DIST. 2—Bardsdale	158	206,177	8.3	86.5	151	190,520	7.6	90.0	14,333,941
Ojai	56	22,835	3.0	75.6	57	25,575	3.1	79.8	3,196,809
Piru	97	161,745	10.4	88.2	95	212,280	13.6	89.0	8,496,438
Rincon	108	1,066,597	79.9	68.3	114	1,532,158	87.3	83.7	24,276,273
Santa Paula	40	13,077	2.7	66.5	42	13,357	2.6	67.3	2,208,097
Sespe	25	42,988	11.9	79.5	26	41,410	11.6	74.6	3,035,971
Simi	48	13,702	1.8	87.8	47	12,866	1.5	98.3	2,179,693
South Mountain	90	268,568	17.9	92.0	92	265,580	16.5	94.8	23,117,723
Ventura	392	6,188,447	106.6	81.8	411	7,436,715	109.8	89.5	252,355,469
Ventura County	2	59,269	163.7	100.0	2	79,778	216.8	100.0	600,715
Totals	1,016	8,043,405	53.3	82.0	1,037	9,810,239	58.4	88.0	333,801,129

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

DIST. 3—Arroyo Grande	10	9,550	6.3	83.8	10	11,482	7.0	88.8	1,238,035
Capitan	11	100,744	66.1	76.5	54	743,591	84.5	88.6	6,498,161
Casmalia	7	44,895	68.6	51.6	8	62,247	67.5	62.6	14,672,973
Cat Canyon	31	874,134	254.0	61.3	47	1,386,021	198.2	80.9	27,311,519
Elwood	55	325,743	37.7	86.8	63	544,828	57.2	82.3	69,225,565
La Goleta Gas	[26]				[26]				283
Lompoc	10	78,423	66.7	64.9	24	339,617	89.6	85.8	10,610,463
Mesa	21	29,770	8.1	96.3	18	27,835	9.1	92.6	3,409,024
Moody Gulch	1	668	3.9	94.5	1	479	2.9	88.6	59,227
Santa Maria	162	399,482	20.7	65.9	191	767,860	24.7	89.1	98,626,967
Santa Maria Valley	181	2,560,149	129.8	60.2	232	4,976,590	134.6	86.6	29,697,924
Sargent	8	4,344	4.0	75.1	8	4,504	3.9	77.0	758,416
Summerland	3	2,733	5.1	98.7	3	2,649	4.5	97.1	3,174,182
San Luis Obispo County—Huasna Area	0		0	0					
San Mateo County—Half Moon Bay	0		0	0					
Totals	500	4,430,635	72.1	67.9	659	8,867,703	84.6	86.5	265,282,739
DIST. 4—Antelope Hills	1	8,439	156.3	29.8	5	87,746	129.4	73.7	96,185
Belridge, North	66	1,070,005	116.1	77.2	60	885,158	107.2	74.8	44,305,583
Belridge, South	220	379,315	10.1	94.6	252	575,161	14.0	88.7	25,536,640
Buttonwillow Gas	[17]				[15]				
Canal	35	568,860	128.5	69.9	35	491,616	102.4	74.5	7,643,341
Canfield Ranch	1	6,918	40.2	95.0	1	5,962	39.0	83.2	101,071
Coles Levee	114	2,323,832	147.9	76.1	122	3,111,214	192.0	72.2	14,269,142
Coles Levee	[3]				[2]				
Devil's Den	12	5,163	4.2	56.6	8	2,840	4.2	45.5	85,930
Edison	110	494,856	28.8	86.2	108	512,851	27.5	93.8	9,661,863
Elk Hills	208	1,921,543	61.2	83.4	211	2,441,354	66.9	94.0	161,487,991
Elk Hills	[1]				[1]				
Fruitvale	163	1,154,001	44.8	87.3	162	1,189,319	43.4	91.9	27,174,022
Greeley	72	1,314,793	186.1	54.2	77	1,282,520	182.9	49.5	9,041,303
Kern Front	444	1,226,950	16.3	93.6	448	1,215,429	15.4	95.6	50,162,163
Kern River	1,793	1,292,183	4.3	93.3	1,865	1,399,178	4.4	93.5	278,377,392
Lost Hills	368	697,817	11.0	95.5	366	690,294	10.7	95.9	52,718,248
McKittrick-Temblor	264	907,166	20.4	93.0	274	894,555	18.7	94.8	94,038,850
Midway-Sunset	3,139	10,021,879	19.5	90.4	3,233	10,491,955	18.8	93.6	930,593,045
Midway-Sunset	[12]				[14]				
Mt. Poso	384	3,405,709	57.3	85.5	401	4,068,642	60.6	90.9	62,441,613
Mountain View	165	938,539	35.0	89.8	161	824,863	30.1	92.6	42,389,097
Paloma	2	130,263	468.6	76.8	2	142,276	553.6	69.8	481,460
Paloma	[3]				[3]				
Poso Creek	76	273,191	22.0	90.1	84	330,426	23.9	89.4	4,698,278
Rio Bravo	98	2,021,611	215.7	52.8	97	1,556,269	196.9	44.3	16,303,946
Round Mountain	238	1,864,679	47.4	91.3	243	2,049,678	47.7	96.1	35,148,890
Semitropic Gas	[14]				[9]				
Strand	13	222,671	130.3	72.6	13	197,541	97.7	84.5	1,635,568
Ten Section	118	2,250,565	120.1	87.7	119	2,554,245	122.6	95.2	20,396,952
Trico Gas	[24]				[25]				
Wasco	13	261,630	179.0	62.1	13	188,833	174.0	45.4	2,174,616
Wheeler Ridge	34	49,921	8.3	97.8	34	48,852	8.1	96.6	4,043,614

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

TABLE H—Continued

Production Statistics and Operating Data of California Oil Fields—1942

Field	January 1 to June 30				July 1 to December 31				
	Average number of producing wells—actual	Oil (bbls.)	Production per well per day (bbls.)	Percentage of time wells produced	Average number of producing wells—actual	Oil (bbls.)	Production per well per day (bbls.)	Percentage of time wells produced	Cumulative production of oil (bbls.) to end 1942
DIST. 4—Continued									
Kern County:									
Bowerbank Area	[2]0				[2]0				
Dyer Creek	1	3,986	94.9	23.2	1	12,002	78.4	83.2	18,522
Grapevine Area	1	2,414	13.3	100.0	1	2,430	13.5	97.8	100,317
Shafter Area	2	4,684	28.4	45.6	2	16,575	45.4	99.2	34,848
Shale Hills Area	1	1,251	14.4	48.1	1	212	14.1	8.2	1,463
Strand Area, East					1	7,723	1287.2	3.3	7,723
Tulare County—Terra Bella Area	1	600	7.6	43.7	0	0	0	0	26,884
Totals	8,157	34,825,434	26.3	89.8	8,400	37,277,719	26.2	91.9	1,895,196,560
DIST. 5—Coalinga	1,030	3,290,169	19.5	90.5	1,131	4,068,185	20.7	94.4	372,282,711
East Coalinga Extension	215	4,756,905	235.2	52.0	214	7,188,565	284.3	64.2	30,195,798
Eureka Gas	[2]2				[2]2				
Helm	3	26,561	93.2	52.5	5	54,244	117.7	50.1	83,354
Jacalitos	3	22,653	50.9	82.0	5	34,262	47.7	78.0	60,146
Kettleman Middle Dome	0	0	0	0	0	0	0	0	548,562
Kettleman North Dome	264	5,762,633	157.0	76.8	251	7,255,836	192.0	81.8	265,541,302
Marysville Buttes Gas	[2]5				[2]4				
McDonald Island Gas	[2]5				[2]5				
Raisin City	9	134,880	101.3	81.7	10	170,549	105.1	88.2	368,145
Rio Vista Gas	[2]36				[2]41				
Riverdale	2	20,566	83.3	68.2	8	74,936	80.3	63.4	97,751
Tracy Gas	[2]4				[2]2				
Fresno County	1	1,670	9.4	98.3	1	97	16.2	3.3	7,944
Glenn County—Willows Area	[2]0				[2]0				
Kings County	1	945	10.5	49.7	1	1,658	16.4	54.9	6,642
Madera County—Chowchilla Area	[2]9				[2]0				
San Joaquin County—Vernalis Area	[2]1				[2]2				
Solano County—Potrero Hills Area	[2]0				[2]1				
Sonoma County—Petaluma Area	[2]1				[2]1				3,304
Stanislaus County—Vernalis Area	[2]1				[2]1				
Yolo County—Fairfield Knolls Area	[2]1				[2]2				
Totals	1,528	14,016,982	61.4	82.5	1,626	18,848,332	71.6	88.0	669,195,659
Grand totals	18,033	114,082,556			18,627	133,391,545			6,067,997,637
DIST. 1—Imperial Carbon Dioxide Gas	17				13				

[2]Gas wells omitted from totals.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Proved Oil Land

The total proved oil land and natural gas land in California as of December 31, 1942 was 211,805 acres; an increase of 12,560 acres during the year 1942, according to data furnished by the Division of Oil and Gas.[1] The acreage as of December 31, 1941 and December 31, 1942, by counties, is given in the following Table I:

TABLE I

Proved Oil and Natural Gas Land

County	*Acres Dec. 31, 1941*	*Acres Dec. 31, 1942*
Contra Costa	160	250
Fresno	22,637	25,028
Humboldt	400	480
Imperial	203	200
Kern	95,695	100,620
Kings	8,214	8,224
Los Angeles	18,291	18,862
Orange	6,504	6,693
Sacramento	9,640	11,380
San Bernardino	------	10
San Joaquin	1,370	1,370
San Luis Obispo	280	360
Santa Barbara	16,453	16,463
Santa Clara	80	80
Solano	7,390	8,620
Sutter	320	520
Tulare	4,320	5,000
Ventura	7,288	7,645
Totals	199,245	211,805

[1] Summary of Operations—California Oil Fields; Division of Oil and Gas, Fifteenth Annual Report of State Oil and Gas Supervisor, Vol. 28, No. 2, July-Dec., 1942.

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CHAPTER THREE

METALS

Bibliography: Reports of State Mineralogist I-XXXIX (inc.). Bulletins 5, 6, 18, 23, 27, 36, 50, 57, 76, 78, 85, 92, 95, 108. Spurr and Wormser, "Marketing of Metals and Minerals." See also under each metal.

The value of the metals produced in California during 1942 amounted to $46,185,885, as compared with $61,595,912 in 1941. Chief among these as to value is, and always has been gold, followed in turn by tungsten ore, quicksilver, chromite, silver, lead, molybdenum ore, manganese ore, etc.

A comparison of the 1941 output with that of 1942 is afforded by the following table:

Substance	1941		1942		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Copper	8,101,449 lbs.	$955,670	2,138,149 lbs.	$258,716	$697,254—
Gold	1,408,793 fine ozs.	49,307,755	847,997 fine ozs.	29,679,895	19,627,860—
Iron ore			99,092 tons	371,562	+
Lead	6,900,851 lbs.	393,348	10,329,176 lbs.	692,054	298,706+
Silver	2,154,188 fine ozs.	1,531,867	1,450,440 fine ozs.	1,031,424	500,443—
Zinc	880,612 lbs.	66,046	1,275,795 lbs.	118,659	52,613+
Unapportioned	[a]	9,340,926	[b]	14,033,575	4,692,649+
Total values		$61,595,912		$46,185,885	
Net increase					$15,410,027

[a] Includes antimony, chromite, iron ore, manganese ore, molybdenum ore, platinum group metals, quicksilver, titanium ore, and tungsten ore.

[b] Includes antimony, chromite, manganese ore, molybdenum ore, platinum group metals, quicksilver, titanium ore, and tungsten ore.

ALUMINUM

Bibliography: Report XVIII, p. 198, XXXVII. Bulletins 38, 67. U. S. Geol. Surv., Min. Res. of U. S.

To date there has been no commercial production of aluminum ore in California. Only a single authenticated occurrence of bauxite has thus far been noted in this state, being in Riverside County southeast of Corona, but as yet undeveloped.

Minerals containing aluminum are abundant, the most widely distributed being the clays. There are only two, however, thus far of consequence commercially, in the production of the metal; bauxite (to which may be added the related hydrated oxides, hydrargillite and diaspore) and cryolite. Cryolite is found in commercial quantities only in south Greenland, and was formerly the only ore of aluminum used, being still employed as a flux in the extraction of the metal. Bauxite has been for some years the most important source of aluminum and its salts. Its color varies from gray to red, according to the amount of iron present, the composition ranging usually between the following limits: Al_2O_3, 30%–60%; Fe_2O_3, 3%–25%; SiO_2, 0.5%–20%; TiO_2, 0.0–10%. Besides its reduction to the metal bauxite is also utilized in the manufacture of aluminum salts, refractories, alundum (fused alumina) for use as an abrasive, and in the refining of oil.

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

ANTIMONY

Bibliography: State Mineralogist Reports VIII, X, XII-XV (inc.), XVII, XXII, XXIII, XXV-XXVII (inc.), XXXI, XXXIV, XXXVI. Bulletins 38, 91.

During 1941 and 1942 there were shipments of antimony ore in California from properties in Inyo, Kern, San Benito, and San Bernardino counties. The annual details are concealed under the 'Unapportioned' item as provided for in the regulations of the Office of War Information, but will be made available at some later date. The 1942 output was the largest since 1917.

Pure antimony metal and manufactured antimony compounds are of considerable importance as pigments in the ceramic industry. The most important use of the metal, commercially, is in various alloys, particularly type-metal (with tin and lead), babbitt (with tin and copper), and britannia metal (with tin and copper). An alloy of 6% antimony and 94% lead is being extensively used in making battery plates for storage batteries for automobiles, airplanes and radio apparatus.

Present New York quotations (Sept. 23, 1943) are around 16.5¢ per pound for Chinese (duty paid) and 15.839¢ for domestic antimony.

Antimony Production in California, by Years

The production of antimony ore in California by years since 1887 has been as follows:

Year	Tons	Value	Year	Tons	Value
1887	75	$15,500	1916	1,015	$64,793
1888	100	20,000	1917	158	18,786
1889			1918		
1893	50	2,250	1925		
1894	150	6,000	1926	*26	77
1895	33	1,485	1927	20	59
1896	17	2,320	1928	20	761
1897	20	3,500	1929		
1898	40	1,200	1939	150	4,552
1899	75	13,500	1940	*28	7,958
1900	70	5,700	1941	*10	2,537
1901	50	8,350	1942	*	*
1902					
1915	510	35,666	Totals	2,617	$216,227

* Annual details concealed under 'Unapportioned.'
a Beginning 1940, amount of recoverable metal; before, tons of antimony ore shipped.

ARSENIC

Bibliography: Reports XVIII, XXIII, XXV, XXX, XXXIII XXXV. Bulletin 67. U. S. G. S., Min. Res. of U. S.

Arsenic is found in a number of localities in California in the mineral arsenopyrite (FeAsS), which is frequently gold bearing; and in scorodite ($FeAsO_4+2H_2O$), an oxidation product of arsenopyrite. The occurrence of realgar (AsS) has also been noted.

Except for a small output in 1924, there has been no commercial recovery of arsenic from California ores. There having been only a single operator, the figures are concealed under the 'Unapportioned' item.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

BERYLLIUM

Bibliography: State Mineralogist Report XXVII, XXXV, XXXVI. Eng. & Min. Jour.-Press, Vol. 118, No. 8, p. 285, Aug. 23, 1924. U. S. Bureau of Mines Information Circular 6190.

Beryllium is a metal resembling aluminum closely in its chemical character. It has a specific gravity of 1.85, is almost as hard as quartz (will scratch glass) and will take a high polish. The use of beryllium as a metal is still more or less in the experimental stage because the cost of extracting the metal from its ores almost makes it prohibitive and the present sources of supply of the ore are limited. Not until such a time when deposits can be found that will assure a definite supply and metallurgical costs are such as to justify its use, will the metal be found in common use.

There are a number of beryllium minerals, but none have been found in commercial quantities, except beryl, which is a beryllium-aluminum silicate. The chief use at present for ground beryl is as an addition to porcelain products, where it reduces the coefficient of expansion. Beryllium metal is difficult to separate from aluminum.

Present (Sept. 23, 1943) quotations for beryllium ore are per ton in carload lots, 10 to 12 percent BeO $100 to $120, f.o.b. mine.

Beryl occurs in California in the pegmatite dikes of the tourmaline gem district in northern San Diego and northwestern Riverside counties; and an occurrence has recently been noted in western Inyo County, but the quantity is as yet unproved. Thus far there have been no commercial shipments of beryl from California except for gem purposes (the pink and aquamarine varieties).

BISMUTH

Bibliography: State Mineralogist Report XXXV. Bulletins 38, 67, 91. Am. Jour. Sci., 1903, Vol. 16.

During 1942, several hundred pounds of bismuth concentrates were made at a tungsten mine in Fresno county, but no shipments were made during the year.

Several bismuth minerals have been found in California, notably native bismuth and bismite (the ochre) in the tourmaline gem district in San Diego and Riverside counties near Pala. Other occurrences of bismuth minerals, including the sulphide, bismuthinite, have been noted in Inyo, Fresno, Nevada, Tuolumne, San Bernardino, and Mono counties, but only in small quanities. The only commercial production recorded was 20 tons valued at $2,400 in 1904, and credited to Riverside County.

The uses of bismuth are somewhat restricted, being employed principally in the preparation of medicinal salts, and in low melting-point or cliché alloys. These alloys are utilized in automatic fire sprinkler systems, in electric fuses, and in solders.

The present quotation (Sept. 23, 1943) for bismuth is $1.25 per pound, in ton lots for the refined metal.

Generated on 2024-09-24 16:09 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CADMIUM

Bibliography: U. S. Geol. Surv., Min. Res. of U. S., 1908, 1918.

During 1917 and 1918, cadmium metal was recovered by the electrolytic zinc plant of the Mammoth Copper Company in Shasta County. It was shipped in the form of 'sticks' and amounted to a total of several thousand pounds for the two years, the exact figures being concealed under 'Unapportioned.' That was the first, and thus far the only, commercial production of cadmium recorded from California ore. Cadmium occurs there associated with zinc sulphide, sphalerite. Cadmium also occurs in the Cerro Gordo Mines, Inyo County, associated with smithsonite (zinc carbonate).

Cadmium is produced in the United States in two forms—metallic cadmium and the pigment, cadmium sulphide. The principal use of the metal is in low-melting point, or cliché alloys, and its salts are utilized in the arts, medicine, and in electroplating. The sulphide is employed as a paint pigment, being a strong yellow, which is unaffected by hydrogen sulphide gas from coal smoke. It is also employed in coloring glass and porcelain. Cadmium cliché metal is stated to be superior to the corresponding bismuth alloy, for making stereotype plates. Cadmium is also used in bronze telegraph and telephone wires, and gives some promise of being utilized in electroplating.

The present quotation (June 11, 1942) for cadmium is 90¢ per pound for the metal.

CHROMITE

Bibliography: State Mineralogist Reports IV, XII, XIII, XIV, XV, XVII, XVIII, XXI-XXIX (inc.), XXXI, XXXIV-XXXIX (inc.). Bulletins 38, 76, 91. Preliminary Report 3. U. S. G. S., Bull. 430. Min. & Sci. Press, Vol. 114, p. 552.

During 1942 shipments of chromite or chrome-iron ore in California were made from properties in Butte, Calaveras, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Mendocino, Placer, Plumas, San Luis Obispo, Shasta, Siskiyou, Tehama, Trinity, and Tuolumne counties. The annual details are concealed under the 'Unapportioned' item as provided for in regulations of the Office of War Information, but will be released at some later date.

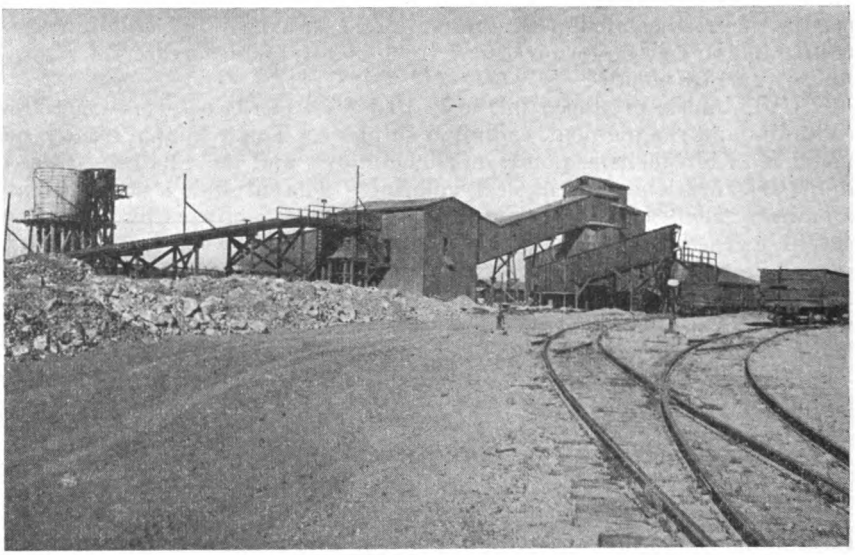
Occurrence

Chromite is widely distributed in California, the principal production, thus far, having come from El Dorado, San Luis Obispo, Del Norte, Shasta, Siskiyou, Placer, Fresno, and Tuolumne counties. In 1918 a total of 29 counties contributed to the State's output. There are two main belts in California yielding this mineral, one along the Coast Ranges from San Luis Obispo County to the Oregon line, including the Klamath Mountains at the north end, and the other in the Sierra Nevada from Tulare County to Plumas County. Chromite occurs as lenses in basic igneous rocks such as periodite and pyroxenite, and in serpentines which have been derived by alteration of such basic rocks.

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Uses

The major consumption of chromite ore is for use as a refractory lining in smelting furnaces for steel and copper. A smaller portion is used in the preparation of ferrochrome for chrome-steel alloys, and of chromium chemicals, the latest development of which is chrome plating as used in the automobile industry, on ships, and in oil refineries to protect metal surfaces from wear and erosion.



Mill of Castro Chrome Associates at Goldtree Siding near San Luis Obispo, San Luis Obispo County. Photo by Walter W. Bradley

Total Chromite Production of California

Production of chromite in California began, apparently in the period 1869-1873 in Del Norte County, followed by San Luis Obispo in 1874. There was considerable activity in San Luis Obispo from 1880 to 1883, inclusive, and a total of 23,238 long tons (or 26,028 short tons) valued at $329,924 was shipped from that county up to the beginning of 1887. There are records of shipments from Sonoma County (before 1883), Placer County (1883 and 1884), and Calaveras County. Apparently the state's total in the period 1869-1883 was some 45,000 tons.[1] The tabulation herewith shows the output of chromite in California annually, including the earliest figures so far as they are available. The figures from 1887 to date are from the records of the State Mining Bureau:

[1] Day, D. T., Mineral Res. of the U. S. 1883-1884, U. S. G. S., pp. 569, 570, 1885.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Year	Tons	Value	Year	Tons	Value
1869-1883			1912	1,270	11,260
Del Norte County, Sonoma County, Placer County, Calaveras County	19,000	$239,400	1913	1,180	$12,700
			1914	1,517	9,434
			1915	3,725	38,044
1874–1887 (San Luis Obispo County)	26,028	329,924	1916	48,943	717,244
			1917	52,379	1,130,298
1887	3,000	40,000	1918	73,955	3,649,497
1888	1,500	20,000	1919	*4,314	97,164
1889	2,000	30,000	1920	1,770	43,031
1890	3,599	53,985	1921	347	6,870
1891	1,372	20,580	1922	379	6,334
1892	1,500	22,500	1923	84	1,658
1893	3,319	49,785	1924	350	6,700
1894	3,680	39,980	1925	191	3,712
1895	1,740	16,795	1926	393	7,063
1896	786	7,775	1927	225	5,063
1897			1928	729	15,179
1898			1929	327	5,025
1899			1930	84	1,905
1900	140	1,400	1931	441	6,737
1901	130	1,950	1932, 1933[a]	1,206	16,587
1902	315	4,725	1934	294	3,498
1903	150	2,250	1935	488	6,111
1904	123	1,845	1936	221	3,314
1905	40	600	1937	1,918	20,830
1906	317	2,859	1938	982	10,864
1907	302	6,040	1939	3,936	52,673
1908	350	6,195	1940	2,599	32,796
1909	436	5,309	1941	17,307	355,354
1910	749	9,707	1942	[a]	[a]
1911	935	14,197	Totals	293,067	$7,205,296

* Recalculated to 45% Cr_2O_3 beginning with 1919.
[a] Included under 'Unapportioned.'

COBALT

Bibliography: Report XIV, XXXIII, XXXIV, XXXVII. Bulletins 67, 91. U. S. G. S., Min. Res. of U. S., 1912, 1918. U. S. B. M., I.C. 6331.

Occurrences of some of the cobalt minerals have been noted in several localities in California, but to date no commercial production has resulted. Some of the copper ores of the foothill copper belt in Mariposa and Madera counties have been found to contain cobalt up to 3%.

The nominal quotation for cobalt (September 23, 1943) is around 97 to 99% at $2.11 per pound for the refined metal.

The most important use of cobalt is in the manufacture of the alloy, stellite, in which it is combined with chromium, for making high-speed lathe tools, and non-tarnishing cutlery and surgeons' appliances. The metal is also used in electroplating, similarly to nickel; and the oxide, carbonate, chloride, sulphate and other salts are used in ceramics for coloring. Some of the organic salts of cobalt (acetate, resinate, oleate) are employed as 'driers' in paint and varnish.

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

COPPER

Bibliography: State Mineralogist Reports VIII-XXXIX (inc.). Bulletins 23, 50, 91.

The total output of copper in California during 1942 amounted to 2,138,149 pounds of recoverable metal valued at $258,716. This was a decrease in both amount and value as compared with the 1941 figures, which were 8,101,449 pounds worth $955,970. The average price of copper during 1942 was 12.1¢ per pound compared with 11.8¢ per pound in 1941; 11.3¢ per pound in 1940; 10.4¢ per pound in 1939; 9.8¢ in 1938; 12.1¢ in 1937; 9.2¢ in 1936; 8.3¢ in 1935; and 8.0¢ in 1934.

Distribution of the 1942 output of copper in California by counties was as follows:

County	Pounds	Value
Amador	1,854	$224
Calaveras	531,618	64,326
Humboldt	6,409	775
Inyo	753,556	91,180
Kern	2,172	263
Madera	64,988	7,864
Mariposa	26,973	3,264
Nevada	13,299	1,609
Placer	7,600	920
San Bernardino	157,195	19,021
Siskiyou	7,668	928
Tuolumne	4,555	551
Alameda, Butte, El Dorado, Imperial, Los Angeles, Mono, Orange, Plumas, Riverside, Santa Barbara, Shasta, Trinity*	560,262	67,791
Totals	2,138,149	$258,716

* Combined to conceal the output of individual producers in each.

Copper Production of California, by Years

Although some mining of copper ores in a small way had been done earlier, shipments in appreciable quantities began in 1861 and continued of importance up to the end of 1867, when a total of 68,631 tons (of 2376 pounds) of high-grade ores, and 847 tons of matte or 'regulus'[2] had been shipped to smelters at New York, Boston, and Swansea, Wales. The most important district at that time was Copperopolis and vicinity in Calaveras County, with some shipments also made from Mariposa, El Dorado, Fresno and San Luis Obispo counties. From 1868 to 1882, the output was insignificant. There are wide discrepancies in the figures recorded for copper production previous to 1882, in which year the data of the U. S. Geological Survey began. The detailed statistics of the California State Mining Bureau began in the year 1894.

[2] Browne, J. Ross, Mineral Resources West of the Rocky Mountains, p. 168, 1867.

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Amount and value of copper production in California annually since 1882 is given in the following tabulation:

Copper Production of California, by Years

Year	Pounds	Value	Year	Pounds	Value
1882	826,695	$144,672	1913	34,471,118	$5,343,023
1883	1,600,862	265,743	1914	30,491,535	4,055,375
1884	876,166	120,911	1915	40,968,966	7,169,567
1885	469,028	49,248	1916	55,809,019	13,729,017
1886	430,210	43,021	1917	48,534,611	13,249,948
1887	1,600,000	192,000	1918	47,793,046	11,805,883
1888	1,570,021	235,303	1919	22,162,605	4,122,246
1889	151,505	18,180	1920	12,947,299	2,382,303
1890	23,347	3,502	1921	12,088,053	1,559,358
1891	3,397,405	424,675	1922	22,883,987	3,090,582
1892	2,980,944	342,808	1923	28,346,860	4,166,989
1893	239,682	21,571	1924	52,089,349	6,823,704
1894	738,594	72,486	1925	46,968,499	6,669,527
1895	225,650	21,901	1926	33,521,544	4,693,014
1896	1,992,844	199,599	1927	27,350,316	3,582,888
1897	13,638,626	1,540,666	1928	25,162,304	3,623,360
1898	21,543,229	2,475,168	1929	33,809,258	5,941,799
1899	23,915,486	3,990,534	1930	26,534,752	3,449,522
1900	29,515,512	4,748,242	1931	12,954,842	1,178,890
1901	34,931,788	5,501,782	1932	1,417,536	89,307
1902	27,860,162	3,239,975	1933	992,515	63,521
1903	19,113,861	2,520,997	1934	590,638	47,252
1904	29,974,154	3,969,995	1935	2,031,836	168,645
1905	16,997,489	2,650,605	1936	9,991,799	919,245
1906	28,726,448	5,522,712	1937	10,512,500	1,272,013
1907	32,602,945	6,341,387	1938	1,613,491	158,122
1908	40,868,772	5,350,777	1939	8,390,215	872,582
1909	65,727,736	8,478,142	1940	12,833,363	1,450,170
1910	53,721,032	6,680,641	1941	8,101,449	955,970
1911	36,838,024	4,604,753	1942	2,138,149	258,716
1912	34,169,997	5,638,049	Totals	1,200,668,668	$188,302,503

GOLD

Bibliography: State Mineralogist Reports I to XXXIX (inc.), (except III and VIII). Bulletins 36, 45, 57, 91, 92, 95, 108. U. S. Geol. Surv., Prof. Paper 73. U. S. Bur. of Mines, Econ. Paper 3 (1929).

Gold was first, and, for many years, the most important single mineral product of California. Although now surpassed for a number of years in annual value by petroleum, and by natural gas from 1923 to 1932, it still heads our metal list, and California continues to outrank all the other gold-producing States of the United States, including Alaska. In fact, at present, California is producing approximately 25% of the gold mined in the entire United States.

There was a steady increase in the output of both lode and placer mines in California from 1928 to 1942, but in 1941 the value of placer production continued to increase, although that of lode dropped off 8 percent and in 1942 a sharp decline in the yield of both lode and placer mines, first by the increased difficulty of obtaining supplies and labor and on October 8, 1942, the War Production Board's Order L-208, closing down most of the gold and silver mines in the State. During 1942 there were 434 operating lode mines and 428 placer properties, but these did not include snipers, prospectors, and various individuals selling gold in small lots to the bullion dealers.

The production of gold during 1942 totaled 847,997 fine ounces valued at $29,679,895 being a decrease of 560,796 fine ounces from the

Generated on 2024-09-24 15:59 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

1941 yield, which was 1,408,793 fine ounces worth $49,307,755. Deep or lode mines accounted for 383,071 fine ounces worth $13,407,485 of the 1942 gold output; and placers (mainly bucket-line, drag-line, and power shovel dredges) produced 464,926 fine ounces worth $16,272,410.

The 1940 output was the largest in value since 1856 and in amount since 1862. The 1939 lode output of gold was undoubtedly the largest in the history of the State.

As the Division of Mines has never independently gathered the statistics of gold and silver production, these figures, as in former years, are published by cooperation with and through the courtesy of Charles White Merrill and H. M. Gaylord of the Division of Mineral Statistics, U. S. Bureau of Mines.

The largest production by counties was reported by Nevada County with an output of 161,593 fine ounces ($5,655,755); followed by Sacramento County with 125,120 fine ounces ($4,379,200); Yuba County with 75,595 fine ounces ($2,645,825); Butte County with 60,916 fine ounces ($2,132,060); followed in turn by Kern, Amador, Siskiyou, and Mariposa counties, all with a total gold yield having a value in excess of a million dollars.

The gold from Nevada, Kern, Amador, and Mariposa counties is mainly from the lode or deep mines; while that from Butte, Sacramento, Siskiyou, and Yuba counties is almost entirely from dredges.

Distribution for the 1942 gold output by counties was as follows:

Counties	Mines producing[1]		Totals	
	Lode	Placer	Fine ounces	Value
Alpine	2		17	$595
Amador	14	25	49,474	1,731,590
Butte	3	33	60,916	2,132,060
Calaveras	23	27	28,004	980,140
Del Norte		1	5	175
El Dorado	22	26	18,194	636,790
Fresno		6	1,166	40,810
Humboldt	2	6	4,023	140,805
Imperial	4	1	174	6,090
Inyo	42	1	11,710	409,850
Kern	58	7	56,914	1,991,990
Los Angeles	8	4	479	16,765
Madera	5	16	717	25,095
Mariposa	42	14	29,292	1,025,220
Merced		6	20,053	701,855
Mono	11	1	1,833	64,155
Nevada	14	17	161,593	5,655,755
Orange	2		5	175
Placer	10	36	23,291	815,185
Plumas	9	12	8,165	285,775
Riverside	8	2	348	12,180
Sacramento	2	15	125,120	4,379,200
San Bernardino	44	5	9,665	338,275
San Diego	3		7	245
San Francisco		(2)	4	140
San Joaquin		10	18,103	633,605
San Luis Obispo		1	4	140
Santa Barbara and Shasta[3]	18	16	21,539	753,865
Sierra	13	31	18,030	631,050
Siskiyou	29	49	38,758	1,356,530
Stanislaus		5	27,795	972,825
Trinity	16	38	24,197	846,895
Tulare	4		134	4,690
Tuolumne	24	7	12,673	443,555
Yuba	2	10	75,595	2,645,825
Totals	434	428	847,997	$29,679,895

[1] Excludes itinerant prospectors, snipers, high graders, and others who gave no evidence of legal right to property.
[2] Output from property not classed as a "mine."
[3] Combined to avoid disclosure of individual output.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The following is quoted from the advance statement of gold in 1942 by courtesy of the U. S. Bureau of Mines,* Department of Commerce:

"*Gold*—An uninterrupted rise beginning in 1929 culminated in the production of $50,948,485, in gold in 1940, the largest value since 1856. In 1941, however, a reaction set in and gained headway in 1942. Monthly production declined approximately 4 percent a month fairly regularly from January 1941 to May 1942, when the downward trend greatly accelerated and continued at about 16 percent a month to December 1942. Strangely, the period when War Production Board Order L-208 was becoming effective did not mark a substantial change in the trend. Apparently, economic forces were curtailing gold production so rapidly in 1942 that exercise of Federal authority was not needed to accomplish a most drastic curtailment in gold mining in California. Production in December was at an annual rate of 246,612 fine ounces or $8,631,420, which, except for 1929 (when California gold output was valued at $8,526,703), represented the lowest level since 1848.

"The 25 leading gold-producing mines in California in 1942 listed in the following table, yielded 60 percent of the total gold output of the State. In 1942, six placers (five connected-bucket dredges and one dragline dredge) and two lode mines (gold ore) displaced two placers (connected-bucket dredges) and six lodes (five gold ore and one copper ore). Of those displaced, none was working at the end of 1942. Of those on the 1942 list, only four were producing at the close of the year."

Twenty-five Leading Gold-producing Mines in California in 1942, in Order of Output

Rank	Mine	District	County	Rank in 1941	Operator	Source of gold
1	Natomas Co.	Folsom	Sacramento	2	Natomas Co.	Dredge
2	Yuba Unit	Yuba River	Yuba	4	Yuba Consolidated Gold Fields	Dredge
3	Idaho Maryland-Brunswick	Grass Valley-Nevada City	Nevada	1	Idaho Maryland Mines Corporation	Gold ore
4	Empire Star mines	Grass Valley-Nevada City	Nevada	3	Empire Star Mines Co., Ltd.	Gold ore
5	Lava Cap	Grass Valley-Nevada City	Nevada	5	Lava Cap Gold Mining Corporation	Gold ore
6	Capital dredges	Folsom	Sacramento	8	Capital Dredging Co.	Dredge
7	Butte Unit	Oroville	Butte	6	Yuba Consolidated Gold Fields	Dredge
8	Golden Queen	Mojave	Kern	9	Golden Queen Mining Co.	Gold ore
9	Cactus Queen	Mojave	Kern	13	Cactus Mines Co.	Gold ore
10	Central Eureka	Mother Lode	Amador	7	Central Eureka Mining Co.	Gold ore
11	Eagle-Shawmut	Mother Lode	Tuolumne	[1]23	Miller & Clemson	Gold ore
12	Carson Hill	Mother Lode	Calaveras	10	Carson Hill Gold Mining Corporation	Gold ore
13	Alabama	Ophir	Placer	12	Alabama California Gold Mines Co.	Gold ore
14	Original Sixteen to One	Alleghany	Sierra	17	Original Sixteen to One Mine, Inc.	Gold ore
15	Placer Properties Co.	Knights Ferry	Stanislaus	31	Placer Properties Co.	Dragline
16	Snelling	Snelling	Merced	16	Snelling Gold Dredging Co.	Dredge
17	Dredge No. 4	La Grange	Stanislaus	30	La Grange Gold Dredging Co.	Dredge
18	Argonaut	Mother Lode	Amador	11	Argonaut Mining Co.	Gold ore
19	Siskiyou Unit	Callahan	Siskiyou	[1]26	Yuba Consolidated Gold Fields	Dredge
20	Junction City	Junction City	Trinity	33	Junction City Mining Co.	Dredge
21	Surcease	Yankee Hill	Butte	22	Hoefling Bros.	Gold ore
22	Carr Ranch	Trinity Center	Trinity	29	Carrville Gold Co.	Dredge
23	Mount Gaines	Mother Lode	Mariposa	50	Mount Gaines Mining Co.	Gold ore
24	Cosumnes dredge	Cosumnes River	San Joaquin	32	Cosumnes Gold Dredging Co.	Dredge
25	Kister property	Oroville	Butte	43	Gold Hill Dredging Co.	Dredge

[1] Corrected figure.

Total Gold Production of California.

The presence of gold in stream gravels near Los Angeles was known and worked in a small way by the Indians, at least as early as 1841,[1] and possibly 1820.[2] On March 2, 1844, Don Manuel Castanares, deputy for California to the Congress of Mexico, reported [3] to his government that placers near Los Angeles had produced up to December, 1843, a total of 2000 ounces of gold dust, most of which had been sent to the United States Mint at Philadelphia.

* U. S. Bureau of Mines, Mineral Year Book Review of 1942 (chapter reprint), Gold, Silver, Copper, Lead, and Zinc in California, pp. 264-265.

[1] Hittell, T. H., History of California, Vol. II, p. 12, 1885.

[2] Bancroft, H. H., History of California, Vol. II, p. 417, 1886.

[3] Mercantile Trust Review of the Pacific, Vol. XIV, No. 2, p. 43, Feb. 15, 1925.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

As the padres and the rancheros discouraged the quest of gold, this early, small production caused no particular excitement. It was not until James W. Marshall's finding of gold nuggets in the tail-race of Sutter's saw mill on the American River, January 24, 1848, was heralded abroad that the great rush began, and California became a commonwealth of first rank almost over night. There are, however, no authentic data on gold production prior to 1848, other than occasional, scattered references such as above quoted.

The following table was originally compiled by Chas. G. Yale, of the Division of Mineral Resources, U. S. Geological Survey, but for a number of years statistician of the California State Mining Bureau and the U. S. Mint at San Francisco. The authorities chosen for certain periods were: J. D. Whitney, State Geologist of California; John Arthur Phillips, author of "Mining and Metallurgy of Gold and Silver" (1867); U. S. Mining Commissioner R. W. Raymond; U. S. Mining Commissioner J. Ross Browne; Wm. P. Blake, Commissioner from California to the Paris Exposition, where he made a report on "Precious Metals" (1867); John J. Valentine, author for many years of the annual report on precious metals published by Wells, Fargo & Company's Express; and Louis A. Garnett, in the early days manager of the San Francisco refinery, where records of gold receipts and shipments were kept. Mr. Yale obtained other data from the reports of the director of the U. S. Mint and the director of the U. S. Geological Survey. The authorities referred to who were alive at the time of the original compilation of this table in 1894 were all consulted in person or by letter by Mr. Yale with reference to the correctness of their published data, and the final table quoted was then made up.

There was no premium paid on gold during 1932, the price being $20.67 a fine ounce. On August 29, 1933, there was an executive order lifting the embargo on gold ores, concentrates, precipitates, and unretorted amalgam, followed on October 25, 1933, by another order instructing the Reconstruction Finance Corporation to buy newly-mined gold at a price fixed by the U. S. Treasurer which corresponded to the world price, all of which had an effect on the 1933 gold yield. On January 30, 1934, the Gold Reserve Act of 1934 was passed, followed by the President's proclamation of January 31, 1934, which fixed the weight of the gold dollar at 15 5/21 grains, nine-tenths fine. The value of gold thereby became $35 a fine ounce. The average weighted value of gold per fine ounce in 1934 was $34.95.

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The figures for 1903-1923 (inclusive) are those prepared by the U. S. Geological Survey; and since by the U. S. Bureau of Mines:

Total Gold Production of California, 1848 to 1942

Year	Fine ounces	Value	Year	Fine ounces	Value
1848	11,866	$245,301	1897	767,779	$15,871,401
1849	491,072	10,151,360	1898	769,476	15,906,478
1850	1,996,586	41,273,106	1899	741,881	15,336,031
1851	3,673,512	75,938,232	1900	767,390	15,863,355
1852	3,932,631	81,294,700	1901	821,845	16,989,044
1853	3,270,803	67,613,487	1902	818,037	16,910,320
1854	3,358,867	69,433,931	1903	788,544	16,300,653
1855	2,684,106	55,485,395	1904	901,484	18,633,676
1856	2,782,018	57,509,411	1905	914,217	18,898,545
1857	2,110,513	43,628,172	1906	906,182	18,732,452
1858	2,253,846	46,591,140	1907	809,214	16,727,928
1859	2,217,829	45,846,599	1908	907,590	18,761,559
1860	2,133,104	44,095,163	1909	979,007	20,237,870
1861	2,026,187	41,884,995	1910	953,734	19,715,440
1862	1,879,595	38,854,668	1911	954,870	19,738,908
1863	1,136,897	23,501,736	1912	953,640	19,713,478
1864	1,164,455	24,071,423	1913	987,187	20,406,958
1865	867,405	17,930,858	1914	999,113	20,653,496
1866	828,367	17,123,867	1915	1,085,646	22,442,296
1867	883,591	18,265,452	1916	1,035,745	21,410,741
1868	849,265	17,555,867	1917	971,733	20,087,504
1869	881,830	18,229,044	1918	799,588	16,528,953
1870	844,537	17,458,133	1919	807,667	16,695,955
1871	845,493	17,477,885	1920	692,297	14,311,043
1872	748,951	15,482,194	1921	759,721	15,704,822
1873	726,554	15,019,210	1922	709,678	14,670,346
1874	835,186	17,264,836	1923	647,210	13,379,013
1875	816,377	16,876,009	1924	636,140	13,150,175
1876	755,169	15,610,723	1925	632,035	13,065,330
1877	798,249	16,501,268	1926	576,798	11,923,481
1878	911,343	18,839,141	1927	564,586	11,671,018
1879	949,439	19,626,654	1928	521,740	10,785,315
1880	968,986	20,030,761	1929	412,479	8,526,703
1881	929,920	19,223,155	1930	457,200	9,451,162
1882	829,458	17,146,416	1931	523,135	10,814,162
1883	1,176,329	24,316,873	1932	569,167	11,765,726
1884	657,900	13,600,000	1933	[a]613,579	15,683,075
1885	612,478	12,661,044	1934	[b]719,064	25,131,284
1886	711,911	14,716,506	1935	[c]890,430	31,165,050
1887	657,349	13,588,614	1936	1,077,442	37,710,470
1888	616,000	12,750,000	1937	1,174,578	41,110,230
1889	542,425	11,212,913	1938	1,311,129	45,889,515
1890	595,486	12,309,793	1939	1,435,264	50,234,240
1891	615,759	12,728,869	1940	1,455,671	50,948,485
1892	608,166	12,571,900	1941	1,408,793	49,307,755
1893	606,564	12,538,780	1942	847,997	29,679,895
1894	670,636	13,863,282			
1895	741,798	15,334,317	Totals	101,115,668	$2,241,096,081
1896	831,158	17,181,562			

a Value calculated at an average weighted price of $25.56 per fine ounce; previously $20.6718.
b Value calculated at an average weighted price of $34.95 per fine ounce.
c Value $35 per fine ounce, beginning 1935.

IRIDIUM (see under Platinum)

IRON ORE

Bibliography: State Mineralogist Reports II, IV, V, X, XII-XV (inc.), XVII, XVIII, XXI-XXVII (incl.), XXX, XXXI, XXXIII-XXXVI (inc.), XXXIX. Bulletins 38, 67, 91. Am. Inst. Min. Eng., Trans. LIII. Min. & Sci. Press, Vol. 115, pp. 112, 117-122; Vol. 123, pp. 94-96, 113-114.

During 1942 there were shipments of iron ore in California coming from three properties in San Bernardino County; and from one property each in Inyo, Shasta, and Trinity counties to the total amount of 99,092 tons, valued at $371,562. This was the largest annual output as to both amount and value ever reported in this State.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The material mined during the year was hematite from San Bernardino County and magnetite from Inyo, Shasta, and Trinity counties. The hematite was used for steel and in the manufacture of high-iron cement, with the magnetite for heavy concrete used as ballast.

There are considerable deposits of iron ore known in California, notably in Shasta, Madera, Placer, Plumas, Riverside, San Bernardino, and Los Angeles counties, but production has so far been limited for lack of an economic supply of coking coal. Some pig iron has been made, utilizing charcoal for fuel, both in blast furnaces and by electrical reduction; also, ferrochrome, ferromanganese, and ferrosilicon have been made in California.

Iron Ore Production in California, by Years

Total iron ore production of California, with annual amounts and values, is as follows:

Year	Tons	Value	Year	Tons	Value
1881*	9,273	$79,452	1920	5,975	$40,889
1882	2,073	17,766	1921	1,970	12,030
1883	11,191	106,540	1922	3,588	18,868
1884	4,532	40,983	1923	3,102	18,665
1885			1924		
1886	3,676	19,250	1925[a]	785	4,710
1887			1926		
1893	250	2,000	1927[a]	5,272	26,000
1894	200	1,500	1928		
1895			1930		
1907	400	400	1931[a]	100	700
1908			1932		
1909	108	174	1934		
1910	579	900	1935[a]	38,339	163,714
1911	558	558	1936	31,084	155,434
1912	2,508	2,508	1937	5,490	29,340
1913	2,343	4,485	1938	27,878	141,406
1914	1,436	5,128	1939	16,990	77,788
1915	724	2,584	1940		
1916	3,000	6,000	1941[a]	54,707	194,362
1917	2,874	11,496	1942	99,092	371,562
1918	3,108	15,947			
1919	2,300	13,796	Totals	345,385	$1,686,635

* Productions for the years 1881-1886 (inc.) were reported as "tons of pig iron" (U.S.G.S., Min. Res. 1885), and for the table herewith are calculated to "tons of ore" on the basis of 47.6% Fe as shown by an average of analyses of the ores (State Mineralogist Report IV, p. 242). This early production of pig iron was from the blast furnaces then in operation at Hotaling in Placer County. Charcoal was used in lieu of coke. Though producing a superior grade of metal, they were obliged finally to close down, as they could not compete with the cheaper English and eastern United States iron brought in by sea to San Francisco.

[a] Annual details concealed under 'Unapportioned.'

LEAD

Bibliography: State Mineralogist Reports IV, VIII-XV (inc.), XVII-XXVIII (inc.), XXX, XXXI, XXXIII-XXXVI (inc.), XXXIX.

The output of lead in California during 1942 amounted to a total of 10,329,176 pounds of metal valued at $692,054, compared with 6,900,851 pounds worth $393,348 in 1941. The average of lead in 1942 was 6.7¢ per pound compared with 5.7¢ per pound in 1941; 5.0¢ per pound in 1940; 4.7¢ per pound in 1939; 4.6¢ per pound in 1938; 5.9¢ per pound in 1937; and 4.6¢ per pound in 1936.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Distribution of the 1942 output of lead by counties was as follows:

County	Pounds	Value
Amador	10,559	$708
Inyo	10,170,864	681,448
Kern	17,616	1,180
Mariposa	15,782	1,057
Nevada	14,562	976
Orange	9,286	622
Placer	23,559	1,579
San Bernardino	59,498	3,986
Butte, Calaveras, El Dorado, Imperial, Los Angeles, Mono, Plumas, Shasta, Siskiyou, Trinity*	7,451	498
Totals	10,329,176	$692,054

* Combined to conceal the output of individual operators in each.

Lead Production of the United States

According to preliminary data issued by the U. S. Bureau of Mines[1] during 1942, the production of primary lead in the United States was 492,435 short tons valued at $65,986,290, being an increase over the national production of 1941, which was 461,426 short tons worth $52,602,564.

Lead Production of California, by Years

Statistics on lead production in California were first compiled by this Bureau in 1887. Amount and value of the output, annually, with total figures, to date, are given in the following table:

Lead Production of California, by Years

Year	Pounds	Value	Year	Pounds	Value
1877	[a]7,836,000	$391,800	1911	1,403,839	$63,173
1878	8,640,000	328,320	1912	1,370,067	61,653
1879	4,502,000	191,335	1913	3,640,951	160,202
1880	4,200,000	215,460	1914	4,697,400	183,198
1881	6,680,000	325,316	1915	4,796,299	225,426
1882	[b]4,000,000	196,800	1916	12,392,031	855,049
1883	[c]3,400,000	145,520	1917	21,651,352	1,862,016
1884	3,200,000	120,512	1918	13,464,869	956,006
1885	2,000,000	80,900	1919	4,139,562	219,397
1886	2,000,000	93,400	1920	4,903,738	392,300
1887	[d]1,160,000	52,200	1921	1,149,051	51,707
1888	900,000	38,250	1922	6,511,280	358,120
1889	940,000	35,720	1923	9,934,522	695,416
1890	800,000	36,000	1924	4,984,387	398,751
1891	1,140,000	49,020	1925	7,352,422	639,661
1892	1,360,000	54,400	1926	8,067,873	645,429
1893	666,000	24,975	1927	2,748,440	173,151
1894	950,000	28,500	1928	1,882,795	109,102
1895	1,592,400	49,364	1929	1,428,777	90,014
1896	1,293,500	38,805	1930	3,542,796	176,241
1897	596,000	20,264	1931	3,934,240	145,568
1898	655,000	23,907	1932	2,418,626	72,480
1899	721,000	30,642	1933	772,463	28,583
1900	1,040,000	41,600	1934	804,911	29,655
1901	720,500	28,820	1935	1,142,405	45,695
1902	349,440	12,230	1936	1,098,545	50,533
1903	110,000	3,960	1937	2,402,110	141,724
1904	124,000	5,270	1938	1,003,096	46,142
1905	533,680	25,083	1939	1,061,294	49,880
1906	338,718	19,307	1940	3,092,636	154,632
1907	328,681	16,690	1941	6,900,851	393,348
1908	1,124,483	46,663	1942	10,329,176	692,054
1909	2,685,477	144,897			
1910	3,016,902	134,082	Totals	224,626,585	$13,116,318

[a] Quantities for 1877-1881 (inc.) from C. E. Siebenthal, Mineral Resources of U. S. 1912, Part I, U. S. Geol. Survey, p. 339; and values for same years from quotations in Eng. & Min. Jour. of New York.
[b] Estimated.
[c] Quantities and values for 1883-1886 (inc.) from Mineral Resources of U. S. Geol. Surv., 1883-1886, respectively.
[d] Data from 1887 to date from reports of California State Mining Bureau.

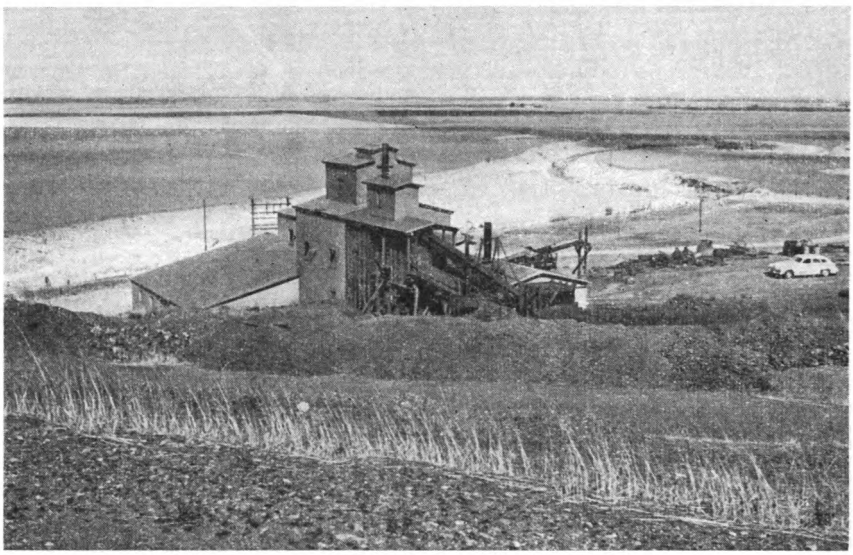
[1] U. S. Bureau of Mines, Mineral Market Notes 1060, May 15, 1943.

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

MANGANESE

Bibliography: State Mineralogist Reports XII-XV (inc.), XVIII, XXII-XXVII (inc.), XXIX-XXXI, XXXIII-XXXIX (inc.). Bulletins 38, 67, 76, 91. U. S. G. S. Bull. 427. Eng. & Min. Jour.-Press, Vol. 117, p. 545.

Manganese ore shipped in California during 1942 came from properties in Alameda, Amador, Imperial, Humboldt, Lake, Marin, Mariposa, Mendocino, Nevada, Mono, Plumas, Riverside, San Bernardino, San Joaquin, San Luis Obispo, Santa Clara, Sonoma, Stanislaus, Trinity, and Tulare counties. The annual details are concealed under 'Unapportioned' item as provided for in regulations of the Office of War Information, but will be revealed at some later date.



Manganese ore-dressing plant of General Dry Battery Co., near Patterson, Stanislaus County. Photo by Walter W. Bradley

Manganese Ore Production in California, by Years

Production of manganese ore in California began at the Ladd Mine, San Joaquin County, in the Telsa District in 1867. When shipments of this ore to England ceased late in 1874, upwards of 5000 tons had been produced by that property. For some years following that, the output was small. The tabulation herewith shows California's output of manganese ore, annually, since 1887, when the compilation of such figures was begun by the State Mining Bureau:

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Year	Tons	Value	Year	Tons	Value
1887	1,000	$9,000	1914	150	$1,500
1888	1,500	13,500	1915	4,013	49,098
1889	53	901	1916	13,404	274,601
1890	386	3,176	1917	15,515	396,659
1891	705	3,830	1918	26,075	979,235
1892	300	3,000	1919	11,569	451,422
1893	270	4,050	1920	2,892	62,323
1894	523	5,512	1921	1,005	12,210
1895	880	8,200	1922	540	7,650
1896	518	3,415	1923	690	10,620
1897	504	4,080	1924	1,115	25,785
1898	440	2,102	1925	832	19,450
1899	295	3,165	1926	235	4,700
1900	131	1,310	1927		
1901	425	4,405	1928	733	8,216
1902	870	7,140	1929		
1903	1	25	1930	207	2,576
1904	60	900	1931		
1905			1932		
1906	1	30	1934	432	4,630
1907	1	25	1935		
1908	321	5,785	1936		
1909	3	75	1939	6	45
1910	265	4,235	1940	314	3,206
1911	2	40	1941	3,565	75,057
1912	22	400	1942	*	*
1913			Totals	92,768	$2,377,338

* Annual details concealed under 'Unapportioned.'

MOLYBDENUM

Bibliography: State Mineralogist Reports XIV, XVII-XXIV (inc.), XXVI-XXVIII (inc.), XXX, XXXIV-XXXVI (inc.). Bulletins 67, 91. U. S. Bur. of Min., Bulletin 111. Proc. Colo. Sci. Soc., Vol. XI.

Molybdenum is used as an alloy constituent in the steel industry, and in certain forms of electrical apparatus. Included in the latter is its successful substitution for platinum and platinum-iridium in electric contact-making and -breaking devices. In alloys it is used similarly to and in conjunction with chromium, cobalt, iron, manganese, nickel, tungsten and vanadium. The oxides and the ammonium salt have important chemical uses.

The two principal molybdenum minerals are: the sulphide, molybdenite, and wulfenite, lead molybdate; the former furnishing practically the entire commercial output. Molybdenite is found in or associated with acidic igneous rocks, such as granite and pegmatite.

Deposits of disseminated molybdenite are known in several localities in California, and in at least two places it occurs in small masses associated with copper sulphides. The first recorded commercial shipments of molybdenum ore in California were during the war, 1916-1918. Some development work has been done on a high-grade deposit at the head of the Kaweah River, Tulare County.

During 1941 and 1942 there were shipments of molybdenum concentrates in California coming from a tungsten mine in Inyo County. The annual details are concealed under the 'Unapportioned' item so as not to reveal the output of an individual producer. The 1940 output was the largest annual yield exceeding the total of all previous production.

The growing consumption of molybdenum by alloy-steel makers in the United States has been stimulated by the fact that molybdenum alone

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

of the steel-alloying metals can be produced commercially in the United States to an extent which avoids all necessity for importation. Another fact has been the marked adaptability of molybdenum steels to large-scale production of automobile and other parts.

The present (Sept. 23, 1943) quotations on molybdenum ores are 45¢ per pound of MoS_2 contained, f.o.b. mine, and on ferromolybdenum are 95¢ per pound Mo, 55%-65% Mo f.o.b. shipping point.

Molybdenum Production of California, by Years

California's production of molybdenum ore by years is summarized in the following tabulation:

Year	Pounds of MoS_2	Value
1916	9,280	$9,945
1917	7,290	9,014
1918	----	----
1919	270	300
1933 1934 [a]	1,306	306
1939 1940 [a]	383,233	147,126
1941 1942	[a]	[a]
Totals	401,379	$166,691

[a] Annual details concealed under 'Unapportioned.'

NICKEL

Bibliography: State Mineralogist Reports XIV, XVII, XXIV, XXV, XXVIII, XXX, XXXIV-XXXVI, (inc.) XXXIX. U. S. G. S., Bulletin 640-D. U. S. Bureau of Standards, Circular 100.

Nickel occurs in the Friday Copper Mine in the Julian District, San Diego County. The ore is a nickel-bearing pyrrhotite, with some associated chalcopyrite. Some ore has been mined in the course of development work but not treated nor disposed of, as they were unable to get any smelter to handle it for them. Nickel ore has also been reported from other localities in California, but not yet confirmed.

Present (June 11, 1942) quotations for nickel are around 35¢ per pound for the refined metal.

OSMIUM (see under Platinum)

PALLADIUM (see under Platinum)

PLATINUM GROUP METALS

Bibliography: State Mineralogist Reports IV, VIII, IX, XII-XXVI (inc.) XXVIII, XXX, XXXI, XXXIV-XXXVII (inc.). Bulletins 38, 45, 67, 85, 91, 92. U. S. Geol. Surv., Bulletins 193, 285. Trans. Am. Inst. Min. Eng., Vol. 47, pp. 217-218.

In California the platinum-group metals are obtained as a by-product from placer operations for gold. The major portion of it comes from the dredges working in Amador, Butte, Merced, Sacramento, Stanislaus, Shasta, Trinity and Yuba counties, with a small amount coming from the hydraulic and surface sluicing mines of Del Norte, Humboldt, Siskiyou and Trinity counties.

The platinum group metals shipped in California during 1942 came from properties in Amador, Butte, El Dorado, Merced, Sacramento, San

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Joaquin, Siskiyou, Stanislaus, Trinity, and Yuba counties. Annual details are concealed under the 'Unapportioned' item as provided for in regulations of the Office of War Information, but will be released at some later date.

Present quotations [1] (September 23, 1943) are, platinum $35 a fine ounce; iridium $165 per fine ounce; osmium per fine ounce, $50; palladium per fine ounce, $24; ruthenium per fine ounce $35; rhodium per fine ounce, $125.

Platinum Production of California, by Years

The annual production and values since 1887 have been as follows:

Year	Ounces	Value	Year	Ounces	Value
1887	416	$10,400	1916	886	$42,642
1888	100	400	1917	610	43,719
1889	500	2,000	1918	571	42,788
1890	500	2,000	1919	*418	60,611
1891	600	2,500	1920	477	68,977
1892	100	500	1921	613	58,754
1893	80	440	1922	795	90,288
1894	75	517	1923	602	78,546
1895	100	600	1924	273	36,452
1896	150	900	1925	292	39,937
1897	162	944	1926	322	32,005
1898	150	900	1927	139	10,749
1899	300	1,800	1928	312	27,902
1900	300	1,800	1929	212	14,416
1901	400	2,500	1930	217	11,700
1902	250	3,200	1931	305	11,979
1903	39	468	1932	278	8,142
1904	70	1,052	1933	236	7,255
1905	123	1,849	1934	424	14,884
1906	200	3,320	1935	121	4,153
1907	91	1,647	1936	1,000	40,669
1908	300	6,255	1937	530	23,704
1909	706	13,414	1938	1,069	35,150
1910	337	8,386	1939	896	32,135
1911	511	14,873	1940	1,358	62,419
1912	603	19,731	1941	909	40,590
1913	368	17,738	1942	*	*
1914	463	14,816			
1915	667	21,149	Totals	22,520	$1,096,665

* Fine ounces, beginning with 1919.
[1] E. & M. J., Metal and Mineral Markets, June 11, 1942.

QUICKSILVER

Bibliography: State Mineralogist Reports IV, V, XII-XV, XVII-XXIX (inc.), XXXI, XXXIII-XXXVII (inc.). Bulletins 27, 78, 91. U. S. Geol. Surv., Monograph XIII. U. S. Bur. of Mines, Tech. Papers 96, 227; Bulletin 222, 335.

Quicksilver was produced in California during 1942 from properties in Colusa, Contra Costa, Fresno, Inyo, Kings, Lake, Mendocino, Monterey, Napa, San Benito, San Luis Obispo, Santa Barbara, Santa Clara, Sonoma, Stanislaus, Trinity, and Yolo counties. The annual details are concealed under the 'Unapportioned' item as provided for in regulations of the Office of War Information, but will be released at some later date.

During the year 1942 the average New York quotation [1] was $196.430 per 76-pound flask, while the average price received by the California miner was $184.575 per 76-pound flask.

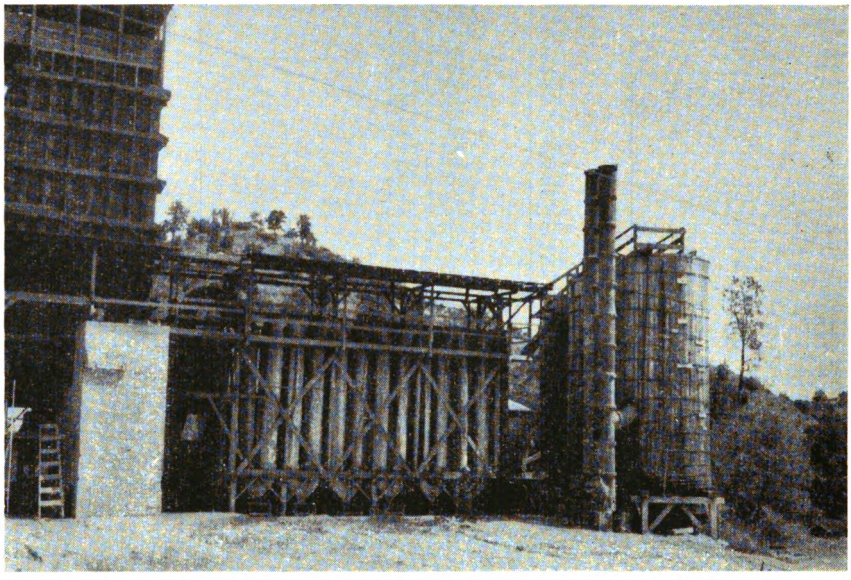
The value of the 1942 output was the greatest in the past 92 years in which a record has been kept of quicksilver production in California.

[1] Engineering and Mining Journal, 1942, Vol. 143.

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Total Quicksilver Production of California

Total amount and value of the quicksilver production of California, as given in available records, are shown in the following tabulation. Though the New Almaden Mine in Santa Clara County was first worked in 1824, and was in practically continuous operation from 1846 to 1921 (the yield being small the first two years), there are no available data on the output earlier than 1850. Previous to June, 1904, a 'flask' of quicksilver contained 76½ pounds; then 75 pounds up to and including 1927; beginning with 1928, 76 pounds. In compiling this table the following sources of information were used: for 1850-1883, table by J. B. Randol, in Report of State Mineralogist IV, p. 336; 1883-1893, U. S. Geological Survey reports; 1894 to date, statistical bulletins of the State Mining Bureau; also State Mining Bureau, Bulletin 27, "Quicksilver Resources of California," 1908, p. 10.



Condensors at Aetna Quicksilver Mine, Napa County. Photo by C. D. Richardson

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Quicksilver Production of California by Years

Year	Flasks	Value	Average price per flask	Year	Flasks	Value	Average price per flask
1850	7,723	$768,052	$99 45	1898	31,092	$1,188,626	$38 23
1851	27,779	1,859,248	66 93	1899	29,454	1,405,045	47 70
1852	20,000	1,166,600	58 33	1900	26,317	1,182,786	44 94
1853	22,284	1,235,648	55 45	1901	26,720	1,285,014	48 46
1854	30,004	1,663,722	55 45	1902	29,552	1,276,524	43 20
1855	33,000	1,767,150	53 55	1903	32,094	1,335,954	42 25
1856	30,000	1,549,500	51 65	1904	[a]28,876	1,086,323	37 62
1857	28,204	1,374,381	48 73	1905	24,655	886,081	35 94
1858	31,000	1,482,730	47 83	1906	19,516	712,334	36 50
1859	13,000	820,690	63 13	1907	17,379	663,178	38 16
1860	10,000	535,500	53 55	1908	18,039	763,520	42 33
1861	35,000	1,471,750	42 05	1909	16,217	773,788	47 71
1862	42,000	1,526,700	36 35	1910	17,665	799,002	45 23
1863	40,531	1,705,544	42 08	1911	19,109	879,205	46 01
1864	47,489	2,179,745	45 90	1912	20,600	866,024	42 04
1865	53,000	2,432,700	45 90	1913	15,661	630,042	40 23
1866	46,550	2,473,202	53 13	1914	11,373	557,846	49 05
1867	47,000	2,157,300	45 90	1915	14,199	1,157,449	81 52
1868	47,728	2,190,715	45 90	1916	21,427	2,003,425	93 50
1869	33,811	1,551,925	45 90	1917	24,382	2,396,466	98 29
1870	30,077	1,725,818	57 38	1918	22,621	2,579,472	114 03
1871	31,686	1,999,387	63 10	1919	15,200	1,353,381	89 04
1872	31,621	2,084,773	65 93	1920	10,278	775,527	75 45
1873	27,642	2,220,482	80 33	1921	3,157	140,666	44 56
1874	27,756	2,919,376	105 18	1922	3,466	191,851	55 35
1875	50,250	4,228,538	84 15	1923	5,458	332,851	60 98
1876	75,074	3,303,256	44 00	1924	7,948	543,080	68 33
1877	79,396	2,961,471	37 30	1925	7,683	621,831	80 81
1878	63,880	2,101,652	32 90	1926	5,892	516,382	87 64
1879	73,684	2,194,674	29 85	1927	6,488	714,418	111 67
1880	59,926	1,857,706	31 00	1928	[b]7,107	844,649	118 84
1881	60,851	1,815,185	29 83	1929	10,152	1,195,705	117 78
1882	52,732	1,488,624	28 23	1930	11,374	1,255,257	110 36
1883	46,725	1,343,344	28 75	1931	13,478	1,121,624	83 22
1884	31,913	973,347	30 50	1932	5,349	279,780	52 30
1885	32,073	986,245	30 75	1933	4,102	229,472	55 94
1886	29,981	1,064,326	35 50	1934	7,946	534,135	67 22
1887	33,760	1,430,749	42 38	1935	9,353	628,590	67 23
1888	33,250	1,413,125	42 50	1936	8,758	671,055	76 62
1889	26,464	1,190,880	45 00	1937	9,995	837,789	83 82
1890	22,926	1,203,615	52 50	1938	12,171	846,497	69 55
1891	22,904	1,036,406	45 25	1939	11,201	1,105,563	98 43
1892	27,993	1,139,595	40 71	1940	18,907	3,209,754	169 77
1893	30,164	1,108,527	36 75	1941	25,612	4,509,041	176 03
1894	30,416	934,000	30 70	1942	*	*	184 58
1895	36,104	1,337,131	37 04				
1896	30,765	1,075,449	34 96	Totals	2,460,830	$126,930,930	
1897	26,691	993,445	37 28				

[a] Flasks of 75 lbs. from June, 1904; of 76½ lbs. previously.
[b] Flasks of 76 lbs. from January, 1928.
* Concealed under the 'Unapportioned' item.

SILVER

Bibliography: State Mineralogist Reports IV, VIII, XII-XXXIX (inc.). Bulletins 67, 91, 108. Min. & Sci. Press, March 1, 1919.

The 1942 output of silver in California totaled 1,450,440 fine ounces valued at $1,031,424, being a decrease in both value and amount as compared with the 1941 production of 2,154,188 fine ounces worth $1,531,867. Of the 1942 yield 40,635 fine ounces worth $28,896 came from the placers. The average price paid for new mined domestic silver in 1942 was 71.11¢ per fine ounce compared with 71.11¢ in 1941; 71.11¢ in 1940; 67.80¢ in 1939; 64.60¢ in 1938; 77.35¢ in 1937; 77.45¢ in 1936; and 71.875¢ in 1935.

Generated on 2024-09-24 16:04 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Silver production by counties for 1942 was as follows:

County	Fine ounces	Value
Alpine	3	$2
Amador	11,091	7,887
Butte	20,350	14,471
Calaveras	8,380	5,959
Del Norte	3	2
El Dorado	2,284	1,624
Fresno	201	143
Humboldt	637	453
Imperial	169	120
Inyo	333,368	237,062
Kern	597,683	425,019
Los Angeles	229	163
Madera	242	172
Mariposa	9,619	6,840
Merced	1,942	1,381
Mono	15,581	11,080
Nevada	300,963	214,018
Orange	3,323	2,363
Placer	31,511	22,408
Plumas	959	682
Riverside	181	129
Sacramento	6,387	4,542
San Bernardino	65,717	46,732
San Diego	3	2
San Joaquin	1,762	1,253
Santa Barbara and Shasta	15,196	10,806
Sierra	2,631	1,871
Siskiyou	5,888	4,187
Stanislaus	2,544	1,809
Trinity	2,814	2,001
Tulare	57	41
Tuolumne	3,621	2,575
Yuba	5,101	3,627
Totals	1,450,440	$1,031,424

The following paragraph is quoted from the U. S. Bureau of Mines,[1] chapter on Gold and Silver from Mineral Year Book 1942, by courtesy of Charles White Merrill and H. M. Gaylord.

"*Silver*—Most of the silver output in California in 1942 was more localized than that of the gold; the 10 leading silver producing mines, listed in the following table, yielded 85 percent of the State total recoverable silver in that year. The list is similar to that of 1941, except for some changes in rank and the displacement of the Starlight mine (consolidated with its neighbor), Walker, and Grigsby mines, which suspended operations in 1941. By December, six of the 10 leading silver mines had suspended operations."

Ten Leading Silver-producing Mines in California in 1942, in Order of Output

Rank	Mine	District	County	Rank in 1941	Operator	Source of silver
1	Cactus Queen	Mojave	Kern	1	Cactus Mines Co.	Gold-silver ore
2	Lava Cap	Grass Valley-Nevada City	Nevada	2	Lava Cap Gold Mining Corporation	Gold ore
3	Columbia No. 2	Resting Springs	Inyo	6	Shoshone Mines, Inc.	Lead ore
4	Golden Queen	Mojave	Kern	3	Golden Queen Mining Co.	Gold ore
5	Pine Creek	Bishop Creek	Inyo	19	United States Vanadium Corporation	Tungsten-molybdenum-copper ore
6	Essex-Columbia (Darwin Lead)	Coso	Inyo	16	Imperial Mines, Inc.	Silver ore and lead ore
7	Kelly	Randsburg	San Bernardino	7	Frank W. Royer	Silver ore
8	Empire Star mines	Grass Valley-Nevada City	Nevada	8	Empire Star Mines Co., Ltd.	Gold ore
9	Alabama	Ophir	Placer	9	Alabama California Gold Mines Co.	Gold ore
10	Idaho Maryland-Brunswick	Grass Valley-Nevada City	Nevada	17	Idaho Maryland Mines Corporation	Gold ore

[1] U. S. Bureau of Mines, Mineral Year Book, 1942 (Chapter reprint), Gold, Silver, Copper, Lead, and Zinc in California, pp. 265-266.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Silver Production of California, by Years

The amount and value of the silver production of California, and the average price, annually, since 1880 are given in the table following. In the table shown in the statistical bulletins previously to Bulletin 97 (for 1925), the values shown for 1880-1904 (inc.) were taken from the reports of the Director of the Mint, of which the figures for 1880-1896 (inc.) were based on 'coinage value' ($1.2929 per fine ounce). We have recalculated these to commercial value, using the price table of the U. S. Geological Survey (McCaskey, H. D.), Gold and Silver, 1913: Mineral Resources of the U. S., Part I, p. 847. From 1905 to date, the figures are those of the U. S. Geological Survey and its successor, the U. S. Bureau of Mines. Figures for the years prior to 1880 are not available, as there were no reliable records compiled.

Silver Production of California, by Years, Since 1880

Year	Fine oz.	Value	Average price per oz.	Year	Fine oz.	Value	Average price per oz.
1880	882,169	$1,014,494	$1 15	1912	1,300,136	$799,584	$0 615
1881	580,091	655,503	1 13	1913	1,378,399	832,553	604
1882	653,569	745,069	1 14	1914	1,471,859	813,938	553
1883	1,129,244	1,253,461	1 11	1915	1,678,756	851,129	507
1884	3,236,987	3,593,056	1 11	1916	2,564,354	1,687,345	658
1885	1,968,260	2,125,298	1 07	1917	1,775,431	1,462,955	824
1886	1,245,747	1,233,290	99	1918	1,427,711	1,427,711	1 00
1887	1,262,282	1,237,036	98	1919	1,107,189	1,240,051	1 12
1888	1,314,874	1,235,982	94	1920	1,706,327	1,859,896	1 09
1889	823,947	774,510	94	1921	3,629,223	3,629,223	1 00
1890	820,336	861,353	1 05	1922	3,100,065	3,100,065	1 00
1891	737,224	729,852	99	1923	3,559,443	2,918,743	82
1892	358,575	311,960	87	1924	3,555,133	2,381,952	67
1893	415,468	324,065	78	1925	3,054,416	2,119,765	694
1894	229,896	144,834	63	1926	2,022,460	1,262,015	624
1895	463,911	301,542	65	1927	1,620,242	918,677	567
1896	326,757	222,195	68	1928	1,478,711	865,081	585
1897	754,648	452,789	60	1929	1,176,895	627,285	533
1898	701,788	414,055	59	1930	1,622,803	624,779	385
1899	855,869	513,521	60	1931	867,818	251,667	290
1900	1,168,157	724,257	62	1932	493,533	139,176	282
1901	950,831	570,499	60	1933	402,591	140,907	350
1902	1,163,041	616,412	53	1934	844,413	545,883	[a]644
1903	958,230	517,444	54	1935	1,191,112	856,112	[a]719
1904	1,441,259	835,929	58	1936	2,103,799	1,629,392	[a]775
1905	1,076,174	650,009	61	1937	2,888,265	2,234,073	[a]774
1906	1,220,641	817,830	68	1938	2,590,804	1,674,863	[a]646
1907	1,138,856	751,646	66	1939	2,599,139	1,764,264	[a]678
1908	1,647,278	873,057	53	1940	2,359,776	1,678,063	[a]711
1909	2,098,253	1,091,092	52	1941	2,154,188	1,531,867	[a]711
1910	1,840,085	993,646	54	1942	1,450,440	1,031,424	[a]711
1911	1,270,445	673,336	53				
				Totals	94,918,203	$70,159,470	

[a] Average price applied to newly mined within the United States.

TIN

Bibliography: Reports XV, XVII, XVIII, XXV, XXXI, XXXIV, XXXV-XXXVII. Bulletins 67, 91.

During 1940 there was some development at the Apex Mine nine miles north of Cima, San Bernardino County, but no shipments in 1941 or 1942. Here the tin ore occurs in small kidneys along the talcose slip in dolmitic limestone.

In 1928 and 1929 there was a small amount of tin produced from California ore as well as considerable development work which was done at the Temescal mine in Riverside County near Corona. There was an

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

output from the district during 1891-1892 as tabulated below. Small quantities of stream tin have been found in some of the placer workings in northern California, but never in paying amounts.

Two occurrences have also been noted, in northern San Diego County. Crystals of cassiterite were found there, associated with blue tourmaline crystals, amblygonite and beryl. No commercial quantity has been developed, only small pockets having been taken out.

Total Output of Tin in California

Year	Pounds	Value
1891	125,289	$27,564
1892	126,000	32,400
1928 } 1929 } *	1,200	580
Totals	252,489	$60,544

* Annual details concealed under 'Unapportioned.'

TITANIUM

Bibliography: State Mineralogist's Reports XXIII, XXXIV.

During 1942 there were small shipments of titanium ore (ilmenite) made from material recovered from beach sand at Hermosa Beach, Los Angeles County. The annual details are concealed under the 'Unapportioned' item to conceal the output of an individual producer.

Also during the year the E. I. du Pont de Nemours Company continued to do exploration work on the deposit of ilmenite in the San Gabriel Mountains in Los Angeles County to determine the extent of the deposit. They have also run an experimental test on the ores for commercializing it in the near future.

All titanium ore mined in this State came from Los Angeles County and was produced from either the beach black sands which contained approximately 20% titaniferous iron and magnetite, the gangue being silica and several silicates, or from a lode deposit in the San Gabriel Mountains.

The market price of titanium minerals varies as to the titanium oxide it contains. Present (Sept. 23, 1943) quotations are: Rutile 94% TiO at 8¢ to 10¢ a pound, ilmenite 60% TiO at $28 to $30 a gross ton, all prices Atlantic seaboard.

The metal is used in several different alloys with iron, copper and aluminum and for green and white paint pigments, the only colors of titanium pigments now in common use. It is also used in dyes, rubber, as a porcelain glaze, in glass, and cement made from high-titanium iron slags. This cement is resistant to the action of acids.

Total Output of Titanium in California by Years

Year	*Tons*	*Value*
1927 } 1928 } *	10,013	$150,195
1929	-----	---------
1939 } 1940 } *	160	1,800
1941 } 1942 } *	295	3,685
Totals	10,468	$155,680

* Annual details concealed under 'Unapportioned.'

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

TUNGSTEN

Bibliography: Reports XV, XVII, XVIII, XXII, XXIV, XXVIII (inc.), XXX, XXXIV-XXXVII (inc.). Bulletins 38, 67, 91, 95, U.S.G.S., Bull. 652. Proc. Colo. Sci. Soc., Vol. XI. South Dakota School of Mines, Bulletin No. 12. Eng. and Min. Jour.-Press, Vol. 113, pp. 666-669, Apr. 22, 1922.

The commercial production of tungsten ores and concentrates in California began in 1905; and has been continuous since, with the exception of 1920-1922, inclusive. During 1942 shipments were made in California of high-grade sorted tungsten ore and concentrates from properties in Fresno, Inyo, Kern, Mono, Riverside, San Bernardino, Tulare, and Tuolumne counties. The annual details are concealed under the 'Unapportioned' item as provided for in regulations of the Office of War Information, but will be released at some later date. The 1942 output was the largest ever made in this State in the amount shipped, with an average value of $24.16 per unit of WO_3 received by the miner.

Tungsten ores have been produced in California principally in the Atolia-Randsburg district in San Bernardino and Kern counties, and the Bishop district in Inyo County; with smaller amounts having come from near Posey (Jack Ranch), Tulare County; Benton, Mono County; the Kings River district in Fresno County; in eastern San Bernardino County near Goffs and Ivanpah; the Grass Valley district in Nevada County; and recently added to the above is the Darwin district in Inyo County; the Kernville and Weldon districts in Kern County; Topaz Lake district in Mono County; and near Warm Springs, San Diego County. Also there are known occurrences of tungsten ores in Alpine, Calaveras, El Dorado, Mariposa, Madera, Plumas, Riverside, Shasta, and Tuolumne counties, of which several are now in production. It also should be considered that in the last ten years there have been more new tungsten deposits discovered than any other type of mineral deposit in this State. Nearly all the ore mined in California has been scheelite (calcium tungstate), although wolframite (iron-manganese tungstate), hübnerite (manganese tungstate), and other tungsten minerals are found in small amounts, in part associated with the scheelite.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Total Tungsten Ore Production of California

The annual amount and value of tungsten ores and concentrates produced in California since the inception of the industry is given herewith, with tonnages recalculated to 60% WO_3:

Tungsten Production of California by Years

Year	Tons at 60% WO_3	Value	Average unit WO_3 value	Year	Tons at 60% WO_3	Value	Average unit WO_3 value
1905	57	$18,800	$5 50	1926	441	$316,560	$11 96
1906	485	189,100	6 50	1927 [a]	649	429,237	11 03
1907	287	120,587	7 00	1928 [a]			
1908	105	37,750	5 99	1929	150	106,280	11 81
1909	577	190,500	6 50	1930 [a]	120	82,582	11 47
1910	457	208,245	7 60	1931 [a]			
1911	387	127,706	5 50	1932	26	9,509	6 10
1912	572	206,000	6 00	1933	148	76,605	8 63
1913	559	234,673	7 00	1934	261	224,417	14 33
1914	420	180,575	7 17	1935	218	194,542	14 87
1915	962	1,005,467	17 42	1936	236	210,819	14 89
1916	2,270	4,571,521	33 57	1937	611	782,187	21 34
1917	2,466	3,079,013	20 81	1938	732	786,860	17 92
1918	1,982	2,832,222	24 82	1939	1,235	1,153,735	15 47
1919	214	219,316	17 08	1940	1,784	2,267,135	21 15
1920				1941	2,860	4,080,628	23 77
1923	34	19,126	8 17	1942	[a]	[a]	24 16
1924	781	446,009	9 52				
1925	573	348,475	10 14	Totals	22,659	$24,756,077	

[a] Annual details concealed under 'Unapportioned.'

VANADIUM

Bibliography: Reports XV, XXVI. Bulletins 67, 91. Proc. Colo. Sci. Soc., Vol. XI, XXXVI. U. S. Bur. of Mines, Bulletin 104.

No commercial production of vanadium has yet been made in California. Occurrences of this metal have been found at Camp Signal, near Goffs, in San Bernardino County, and two companies at one time did considerable development work in the endeavor to open up paying quantities. Some ore carrying lead vanadate has been developed in the 29 Palms, or Washington district, on the line between Riverside and San Bernardino counties, but no shipments reported.

The principal use of vanadium is as an alloy in steels, especially in tool steel, and in those varieties where resistence to repeated strains is required. Present (September 23, 1943) New York quotations for ferrovanadium are $2.75-$2.90 per pound of vanadium f.o.b. works, and vanadium ore 27½¢ per pound V_2O_5 contained.

ZINC

Bibliography: State Mineralogist Reports XIV, XV, XVII, XVIII, XX-XXIV, XXVI, XXVII, XXX, XXXIII-XXXV (inc.). Bulletins 38, 67, 91.

The recoverable zinc mined in California during 1942 amounted to a total of 1,275,906 pounds valued at $118,659, and came from properties in Calaveras, Inyo, Orange, and San Bernardino counties. The 1942 output was an increase in both amount and value over that of 1941, which was 880,612 pounds worth $66,046.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The mine production of recoverable zinc in the United States [1] during 1942 amounted to 760,210 short tons valued at $138,358,220, compared with the 1941 output of 749,125 short tons worth $112,368,750. The average price per pound for zinc in 1942 was 9.1¢; compared with 7.5¢ in 1941; 6.3¢ in 1940; 5.2¢ in 1939; 4.8¢ in 1938; and 6.5¢ in 1937.

The zinc ores in Shasta and Calaveras counties are associated with those of copper, while those of Inyo, Los Angeles, Orange, San Bernardino, and Tulare were associated principally with lead-silver and zinc-silver ores.

Total Zinc Production of California

Total figures for zinc output of the State are as follows, commercial production dating back only to 1906:

Year	Pounds	Value	Year	Pounds	Value
1906	206,000	$12,566	1925	11,546,602	$877,542
1907	177,759	10,598	1926	20,447,559	1,533,568
1908	54,000	3,544	1927	8,625,004	552,000
1909			1928		
1910			1929		
1911	2,679,842	152,751	1931	149,865	5,314
1912	4,331,391	298,866	1932		
1913	1,157,947	64,845	1933	290,222	12,189
1914	399,641	20,381	1934	721,719	31,034
1915	13,043,411	1,617,383	1935	328,013	14,432
1916	15,950,565	2,137,375	1936	29,740	1,487
1917	11,854,804	1,209,190	1937	39,643	2,577
1918	5,565,516	506,466	1938	17,554	843
1919	1,384,192	101,046	1939	16,390	852
1920	1,188,009	96,229	1940	182,088	11,472
1921	846,184	42,309	1941	880,612	66,046
1922	3,034,430	172,963	1942	1,275,906	118,659
1923					
1924	3,060,000	198,900	Totals	109,484,656	$9,873,427

[1] U. S. Bureau of Mines, Mineral Market Report 1060, May 15, 1943.

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CHAPTER FOUR

STRUCTURAL MATERIALS

Bibliography: State Mineralogist Reports XII-XXXVIII (inc.). Bulletin 38. Spurr and Wormser, "Marketing of Metals and Minerals." "Non-Metallic Minerals," by R. B. Ladoo. "Industrial Minerals and Rocks," A. I. M. E., 1937. See also under each substance.

As indicated by this subdivision heading, the mineral substances herein considered are those more or less directly used in building and structural work. California is independent, so far as these are concerned, and almost any reasonable construction can be made with materials produced in the State. Chromite, which previous to 1933 was listed under structural materials in the statistical reports of the State Division of Mines, is now transferred to the metals group, thus coinciding with the practice of the United States Bureau of Mines.

Lime, previous to 1942, which was carried under this group, is now combined with limestone in the industrial group, so as to avoid possible duplication and as most of the lime is used in industry and not in construction. This "structural" branch of the mineral industry for 1942 had a total value of $70,121,466, compared with $51,938,605 in 1941. Most material grouped in this classification during 1942 showed increases in amount and value, with cement and miscellaneous stone registering all-time highs. Decreased total values were reported by producers of granite, magnesite, marble, and sandstone.

In 1942 all counties, but two, namely Kings and Sutter, contributed to the structural materials total. There is not a county in the fifty-eight counties of the State which is not capable of producing at least one of the materials under the classification.

The following summary shows the value of the structural materials produced in California during the years 1941-1942, with increases or decreases in each instance:

Substance	1941		1942		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Brick and hollow building tile		$3,598,797		$5,708,967	$2,110,170+
Cement	19,531,608 bbls.	26,248,694	23,306,578 bbls.	35,808,841	9,560,147+
Granite		261,661		186,871	74,789—
Lime	110,719 tons	996,514			
Marble		14,448	*	*	*
Sandstone		13,143		8,587	4,556—
Stone, miscellaneous	34,626,035 tons	19,559,883	45,455,085 tons	27,281,342	7,721,459+
Unapportioned		[a]1,245,465		[b]1,126,857	118,608—
Total values		$51,938,605		$70,121,466	
Net increase					$18,182,861

* Included under 'Unapportioned.'
[a] Includes bituminous rock, magnesite, slate, paving blocks, and tube mill pebbles.
[b] Includes bituminous rock, magnesite, marble, slate, paving blocks, and tube mill pebbles.

ASPHALT

Bibliography: State Mineralogist Reports VII, X, XII-XV (inc.), XVII, XVIII. Bulletins 16, 32, 63, 67, 69, 91, 118.

Asphalt was for a number of years accounted for in the statistical reports by the State Mining Bureau, because in the early days of the

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

oil industry, considerable asphalt was produced from outcroppings of oil sand, and was a separate industry from the production of oil itself. However, at the present time most of the asphalt comes from the oil refineries, which produce a better and more uniform grade; hence, its value is not now included in the mineral total, as to do so would be in part a duplication of the crude petroleum figures. Such natural asphalt as is at present mined is in the form of bituminous sandstones, and is recorded under that designation.

BITUMINOUS ROCK

Bibliography: State Mineralogist Reports XII, XIII, XV, XVII, XVIII, XXI, XXII, XXV, XXVI, XXXI.

This material is essentially an uncemented sandstone which is saturated with and held together by a natural asphaltic constituent, probably the residue from the evaporation of a crude petroleum deposit. Bituminous rock is still used to a limited extent for road dressing in those districts adjacent to available deposits, though the manufacture of asphalt at the oil refineries has almost entirely superseded the direct use of the native material. Some of the Santa Cruz County production is put on the market as a material which can be laid cold. This material is especially applicable and valuable for patch jobs.

During 1942 the output of bituminous rock in California came from a single property each in Santa Barbara and Santa Cruz counties; the annual details are concealed under the 'Unapportioned' item so as not to reveal the output of either operator. * The 1942 production showed an increase in amount and value as compared with that of 1941.

Bituminous Rock Production of California, by Years.

The following tabulation shows the total amount and value of bituminous rock quarried and sold in California, from the records compiled by the State Mining Bureau, annually since 1887:

Year	Tons	Value	Year	Tons	Value
1887	36,000	$160,000	1916	19,449	$66,561
1888	50,000	257,000	1917	5,590	18,580
1889	40,000	170,000	1918	2,561	9,067
1890	40,000	170,000	1919	4,614	18,537
1891	39,962	154,164	1920	5,450	27,825
1892	24,000	72,000	1921	8,298	43,192
1893	32,000	192,036	1922	4,624	13,570
1894	31,214	115,193	1923	2,945	11,780
1895	38,921	121,586	1924	6,040	14,922
1896	49,456	122,500	1925	2,681	10,724
1897	45,470	128,173	1926	3,863	21,577
1898	46,836	137,575	1927	3,515	17,704
1899	40,321	116,097	1928	4,966	33,832
1900	25,306	71,495	1929	3,320	14,360
1901	24,052	66,354	1930	8,525	36,075
1902	33,490	43,411	1931		
1903	21,944	53,106	1932	*	
1904	45,280	175,680	1933	23,653	109,140
1905	24,753	60,436	1934	*	
1906	16,077	45,204	1935	36,793	130,301
1907	24,122	72,835	1936	*	
1908	30,718	109,818	1937	41,681	133,344
1909	34,123	116,436	1938	*	
1910	87,547	165,711	1939	36,128	139,242
1911	75,125	117,279	1940	16,546	63,612
1912	44,073	87,467	1941	*	
1913	37,541	78,479	1942	29,709	86,903
1914	66,119	166,618		*	*
1915	17,789	61,468	Totals	1,393,190	$4,428,969

* Annual details concealed under 'Unapportioned.'

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

BRICK AND HOLLOW TILE

Bibliography: State Mineralogist Reports VIII, X, XII-XV (inc.), XVII-XXVIII (inc.), XXXII, XXXVII. Bulletins 38, 39. Preliminary Report No. 7. Cal. Jour. of Development, June, 1925, pp. 5-6.

Bricks of many varieties and in important quantities are annually produced in California, as might be expected in a state with such diversified and widespread mineral resources. The varieties include common, fire, pressed, glazed, enamel, fancy, vitrified, sand-lime, and others. Not only do the plants here supply practically all of our own requirements in these products, but considerable quantities are shipped to contiguous territory and certain products are shipped over a much wider radius. We also include under this heading the various forms of hollow building 'tile' or blocks.

During the year 1942 there was produced in California 117,739 M of common brick, valued at $1,296,449; 55,843 M of fire brick, valued at $3,655,210; 7,353 M of glazed, pressed, vitrified, and fancy brick, worth $412,966; and 24,703 tons of hollow building tile, worth $344,342, the entire output having a total value of $5,708,967, as compared with the 1941 output which was 103,690 M of common brick, worth $1,158,590; 27,864 M of fire brick, worth $2,010,111; 6,371 M of glazed, pressed, fancy, and vitrified brick, worth $264,708; and 16,513 tons of hollow building tile, worth $165,388, with a total value of $3,598,797 for the year. It will be noted that fire brick practically doubled in both amount and value in 1942 over 1941 and that all other brick and building tile showed an increased output during the same period of time.

The 1942 brick and hollow building tile production was manufactured in 33 plants in 16 counties; eleven of which were in Los Angeles County; three in Contra Costa County; two each in Alameda, Sacramento, San Bernardino, San Diego, and San Joaquin counties; and one each in Amador, Fresno, Orange, Placer, Riverside, San Luis Obispo, Santa Barbara, Santa Clara, and Tulare counties.

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Brick and Hollow-Tile Production of California, by Years.

Record of brick production in the state has been kept since 1893 by this Bureau, the figures for hollow building 'tile' or blocks being also included since 1914. The annual and total figures, for amount and value, are given in the following table:

Year	Brick, M	Hollow building blocks, tons	Value
1893	103,900		$801,750
1894	81,675		457,125
1895	131,772		672,360
1896	24,000		524,740
1897	97,468		563,240
1898	100,102		571,362
1899	125,950		754,730
1900	137,191		905,210
1901	130,766		860,488
1902	169,851		1,306,215
1903	214,403		1,999,546
1904	281,750		1,994,740
1905	286,618		2,273,786
1906	277,762		2,538,848
1907	362,167		3,438,951
1908	332,872		2,506,495
1909	333,846		3,059,929
1910	340,883		2,934,731
1911	327,474		2,638,121
1912	337,233		2,940,290
1913	358,754		2,915,350
1914	270,791		2,288,227
1915	180,538		1,678,756
1916	206,960		2,096,570
1917	192,269	29,348	2,532,721
1918	136,374	34,818	2,363,481
1919	156,328	36,026	3,087,067
1920	245,842	99,208	5,704,393
1921	238,022	67,100	5,570,875
1922	374,853	105,909	7,994,991
1923	397,754	122,534	9,738,082
1924	456,716	114,469	9,137,908
1925	361,094	105,491	7,503,976
1926	388,048	90,332	7,026,124
1927	374,111	75,116	6,516,077
1928	272,443	66,277	5,694,770
1929	327,011	66,713	5,607,410
1930	267,019	68,047	4,205,460
1931	151,545	51,988	2,560,415
1932	90,683	27,098	1,605,086
1933	76,905	25,814	1,520,481
1934	66,738	17,534	1,044,661
1935	76,521	21,309	1,855,343
1936	131,667	16,081	2,240,905
1937	148,833	17,521	3,083,902
1938	129,273	16,592	2,594,546
1939	150,503	16,283	3,063,660
1940	129,887	29,048	2,762,885
1941	137,925	16,513	3,598,797
1942	180,935	24,703	5,708,967
Totals	11,174,025	1,361,872	$157,744,543

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CEMENT

Bibliography: State Mineralogist Reports VIII, IX, XII, XIV, XV, XVII, XVIII, XXI-XXVIII (inc.), XXXII. Bulletin 38.

During 1942 cement produced in California amounted to 23,306,578 barrels, valued at $35,808,841, f.o.b. plant, of which 12,056,912 barrels came from plants in northern California and 11,249,666 barrels from plants in the southern part of the State. This is the largest annual output in both amount and value ever reported in this State. The 1941 production amounted to 19,531,608 barrels, worth $26,248,694.

Shipments during 1941 were made by twelve plants in eleven counties to the extent of 23,732,414 barrels, valued at $36,964,122 f.o.b. plant, as compared with 19,833,796 barrels, worth $27,219,800 in 1941. During 1942 there were seven operating mills in northern California; one each in Calaveras, Contra Costa, Merced, San Benito, San Mateo, Santa Clara, and Santa Cruz counties, which shipped a total of 12,150,363 barrels of cement; and five mills in southern California; and two in San Bernardino County, and one each in Kern, Los Angeles,[1] and Riverside counties, which shipped a total of 11,582,051 barrels of cement. There was an average of 2,889 men employed in the above mills during the year. The annual capacity of California cement mills, according to the U. S. Bureau of Mines,[2] was 27,540,000 barrels as of January, 1943, as compared with 26,040,000 barrels for January, 1942.

Cement Production of California, by Years

'Portland' cement was first commercially produced in California in 1891; though in 1860 and for several years following, a natural hydraulic cement from Benicia was utilized in building operations in San Francisco.

"The Benicia Cement Company in 1859-60 was turning out 50 to 100 barrels of cement a day and San Francisco was using about 12,000 barrels a year. The mill price of the product was then $4 a barrel. By 1865, the San Francisco rate of consumption had increased to 100,000 barrels yearly, brick buildings largely taking the place of frame structures, and the price of cement had fallen to $2.50 a barrel, about the same as it is today."[3]

The growth of the industry became rapid after 1902; since which time cement has continued to be an important factor in the industrial life of the State. Although the total cement figures, to date, are not of the same magnitude as those for gold and petroleum, it is interesting to note that the value of California's cement yield in the period 1920-1931 annually exceeded the value of her gold output.

[1] The plant in Los Angeles County grinds clinker coming from other counties, therefore the crude material is credited to the point of origin.

[2] U. S. Bureau of Mines, Monthly Cement Statement No. 260, Jan. 1943.

[3] Monthly Review of Mercantile Trust Co. of Calif., Vol. XIII, No. 3, p. 55, Mar. 1924.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Cement Production of California, by Years

Year	Barrels	Value	Year	Barrels	Value
1891	5,000	$15,000	1918	4,772,921	$7,969,909
1892	5,000	15,000	1919	4,645,289	8,591,990
1893			1920	6,709,160	14,962,945
1894	8,000	21,600	1921	7,404,221	18,072,120
1895	16,383	32,556	1922	8,962,135	16,524,056
1896	9,500	28,250	1923	10,825,405	25,999,203
1897	18,000	66,000	1924	11,655,131	23,225,850
1898	50,000	150,000	1925	13,206,630	25,043,335
1899	60,000	180,000	1926	13,797,173	25,269,678
1900	52,000	121,000	1927	14,661,783	26,474,935
1901	71,800	159,842	1928	13,625,231	24,463,287
1902	171,000	423,600	1929	12,794,729	21,038,565
1903	640,868	968,727	1930	9,831,938	14,575,731
1904	969,538	1,539,807	1931	7,693,712	11,510,655
1905	1,265,553	1,791,916	1932	5,657,549	7,967,107
1906	1,286,000	1,941,250	1933	7,284,031	10,331,395
1907	1,613,563	2,585,577	1934	8,936,055	12,445,616
1908	1,629,615	2,359,692	1935	8,086,292	10,120,721
1909	3,779,205	4,969,437	1936	13,300,188	18,314,589
1910	5,453,193	7,485,715	1937	12,072,062	16,546,229
1911	6,371,369	9,085,625	1938	10,561,037	15,502,574
1912	6,198,634	6,074,661	1939	10,984,033	15,616,219
1913	6,167,806	7,743,024	1940	13,955,255	17,673,212
1914	5,109,218	6,558,148	1941	19,531,608	26,248,694
1915	4,918,275	6,044,950	1942	23,306,578	35,808,841
1916	5,299,507	6,210,293			
1917	5,790,734	7,544,282	Totals	331,219,937	$524,413,388

GRANITE

Bibliography: State Mineralogist Reports X, XII-XXVI (inc.), XXVIII, XXXI, XXXV-XXXVII (inc.). Bulletin 38.

The 1942 output of granite in California had a total value of $186,872, as compared with $261,661 for 1941. The 1942 production included 2,885 cu. ft. of building stone valued at $4,185; 26,703 cu. ft. of monumental stone valued at $171,403; and 4,867 tons of unclassified material including some tuff, volcanic rock, and a small amount of mica schist, which were used as building stone and flagstone having a value of $11,284. The above came from two quarries in Placer County; and one quarry each in Fresno, Lassen, Madera, Riverside, Sacramento, San Bernardino, San Diego, Sonoma, and Ventura counties. The stone from Sonoma County was a tuff and that from Ventura County was volcanic rock.

In recent years there has been a steady decline in the production of granite and other building stone, due to the increase of concrete construction, which is steadily replacing stone.

So far as possible, granite production has been segregated in the statement herewith into the various uses to which the product was put. It will be noted, however, that a portion of the output has been entered under the heading 'Unclassified.' This is necessary because of the fact that some of the producers have no way of telling to what specific use their stone was put after they had quarried and sold the same in the rough.

Varieties

For building purposes, the granite found in California, particularly the varieties from Raymond in Madera County, Rocklin in Placer County and near Porterville in Tulare County, are unexcelled by any similar stone found elsewhere. The quantities available, notably at Raymond

Generated on 2024-09-24 16:03 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

and Porterville, are unlimited. Most of California's 'granite,' particularly that found in the Sierra Nevada Mountains, is technically 'granodiorite' (that is, both plagioclase and orthoclase feldspars are present).

Granites of excellent quality for building and ornamental purposes are also quarried in Riverside, San Bernardino, and San Diego counties. Near Lakeside, San Diego County, there is a fine-grained, 'silver gray' granite of uniform texture and color, especially suited for monumental and ornamental work.

The Fresno County stone is a dark, hornblende diorite, locally called 'black granite,' whose color permits of a fine contrast of polished and unpolished surfaces, making it particularly suitable for monumental and decorative purposes. There is also similar 'black granite' in Tulare County, near Success.

Granite Production of California, by Years

The value of granite produced, annually, since 1887 has been as follows:

Year	Value	Year	Value
1887	$150,000	1916	$535,339
1888	57,000	1917	221,997
1889	1,329,018	1918	139,861
1890	1,200,000	1919	220,743
1891	1,300,000	1920	495,732
1892	1,000,000	1921	725,901
1893	531,322	1922	676,643
1894	228,816	1923	760,081
1895	224,329	1924	1,211,046
1896	201,004	1925	1,853,859
1897	188,024	1926	655,332
1898	147,732	1927	1,398,443
1899	141,070	1928	763,996
1900	295,772	1929	1,169,271
1901	519,285	1930	855,477
1902	255,239	1931	636,741
1903	678,670	1932	398,676
1904	467,472	1933	183,706
1905	353,837	1934	249,083
1906	344,083	1935	339,917
1907	373,376	1936	244,243
1908	512,923	1937	207,738
1909	376,834	1938	131,386
1910	417,898	1939	145,194
1911	355,742	1940	198,896
1912	362,975	1941	261,661
1913	981,277	1942	186,872
1914	628,786		
1915	227,928	Totals	$28,718,246

LIME

Bibliography: State Mineralogist Reports XIV, XV, XVII-XXIX (inc.), XXXIII-XXXV (inc.), Bulletin 38.

The early output of lime in California was used entirely for structural purposes. Later a small percent was put out for chemical, agricultural, and industrial uses and still later lime replaced limestone in metallurgy. In 1942 the structural use had decreased to such a point and other uses increased to where they required the largest part of the lime burnt in this State, so it was decided to include lime with 'industrial' limestone in this statistical report.

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Lime Production of California, by Years

The following tabulation gives the amounts and value of lime produced in California by years since 1894 when compilation of such records was begun by the State Mining Bureau. The figures for quantity have been recalculated from 'barrels,' as shown in the earlier reports, to 'tons' for the years 1894-1922 (inc.):

Year	Tons	Value	Year	Tons	Value
1894	37,350	$318,700	1919	42,070	$552,048
1895	39,776	386,094	1920	46,314	557,232
1896	30,275	261,505	1921	46,353	610,619
1897	28,780	252,900	1922	57,875	671,747
1898	29,786	254,010	1923	70,894	788,834
1899	29,985	314,575	1924	62,029	703,355
1900	31,252	283,699	1925	61,922	685,528
1901	31,738	334,688	1926	63,568	670,837
1902	44,866	369,616	1927	60,498	631,497
1903	49,659	418,280	1928	56,616	547,919
1904	57,945	571,749	1929	42,834	417,101
1905	61,700	555,322	1930	47,662	452,084
1906	68,927	763,060	1931	36,189	360,523
1907	68,422	756,376	1932	27,510	254,223
1908	39,639	379,243	1933	33,425	271,619
1909	52,075	577,824	1934	32,500	309,765
1910	47,951	477,683	1935	59,731	573,212
1911	42,959	390,988	1936	64,275	633,678
1912	52,212	464,440	1937	69,532	681,277
1913	61,344	528,547	1938	70,578	683,403
1914	43,996	378,663	1939	87,288	849,122
1915	35,653	286,304	1940	101,395	902,322
1916	49,364	390,475	1941	110,719	996,514
1917	50,073	311,380			
1918	43,684	461,315	Totals	2,481,288	$24,291,890

MAGNESITE

Bibliography: State Mineralogist Reports XII-XV (inc.), XVII-XXVII (inc.), XXX, XXXI, XXXIV, XXXVI-XXXVII. Bulletins 38, 79, 91. U. S. Geol. Surv., Bulletins 355, 540. Min. Res. 1913, Pt. II, pp. 450-453. Min. & Sci. Press, Vol. 114, p. 237. "Magnesite"—Hearings before Comm. on Ways and Means, House of Repr., on H. R. 5218, June 16, 17, and July 17, 1919. Eng. Soc. W. Penn., Proc. 1913, Vol. 29, pp. 305-388, 418-444. Eng. & Min. Jour.-Press, Vol. 114, July 29, and Dec. 2, 1922. U. S. Tariff Comm., "Crude and Caustic Calcined Magnesite. A Preliminary Statement of Information," May 19, 1926.

During 1942 magnesite was produced in California from a single property each in Alameda, Santa Clara, and Stanislaus counties, and reduced from salt-works bitterns at Newark, Alameda County. The annual details are concealed under the 'Unapportioned' item so as not to reveal the output of a single company. Practically all the above was shipped in the calcined form.

The 1941 output of magnesite in California was the largest since 1917. The 1940-1941 production showed a total of 241,620 net tons of crude magnesite valued at $2,069,220, of this only a small amount was sold as such. Most of the material was calcined before being marketed. Operators reported a total of 101,999 net tons of calcined material valued at $3,520,970 rail-shipping point, was made during 1940-1941 and was deadburned for refractories and material for the plastic trade.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

In California the known deposits are mostly in the metamorphic rocks of the Coast Ranges and the Sierra Nevada, being associated with serpentine areas. The notable exceptions are the sedimentary deposits at Bissell in Kern County and at Afton in San Bernardino County. Several thousand tons have been shipped from the Bissell deposit; and small shipments have been made from the Afton property. Beginning in 1938, a portion of the market for calcined magnesite is being supplied by magnesium oxide produced from salt-works bitterns at a plant at Newark, Alameda County, on San Francisco Bay. The figures for the crude of above tonnage are included under those for magnesium salts in the Salines chapter.

Total Magnesite Production of California

The first commercial production of magnesite in California was made in the latter part of 1886 from the Cedar Mountain district,[1] southeast of Livermore, Alameda County. Shipments amounting to 'several tons' or 'several carloads' were sent by rail to New York; but there is apparently no exact record of the amount for that first year. The statistical records of the State Mining Bureau began with the year 1887, and the table herewith shows the figures for amount and value, annually, from that time. Shipments of magnesite from Napa County began in 1891 from the Snowflake Mine; from the Red Mountain deposits in Santa Clara County, in 1899; and from Tulare County in 1900.

Total Magnesite Production of California

Year	Tons	Value	Year	Tons	Value
1887	600	$9,000	1916	154,052	$1,311,893
1888	600	9,000	1917	209,648	1,976,227
1889	600	9,000	1918	83,974	803,492
1890	600	9,000	1919	44,696	452,094
1891	1,500	15,000	1920	83,695	1,033,491
1892	1,500	15,000	1921	47,837	511,102
1893	1,093	10,930	1922	55,637	594,665
1894	1,440	10,240	1923	73,963	946,643
1895	2,200	17,000	1924	67,236	900,183
1896	1,500	11,000	1925	64,623	872,944
1897	1,143	13,671	1926	50,915	587,642
1898	1,263	19,075	1927	46,093	577,887
1899	1,280	18,480	1928	45,645	501,590
1900	2,252	19,333	1929	47,269	488,014
1901	4,726	43,057	1930	38,681	388,472
1902	2,830	20,655	1931	21,576	182,283
1903	1,361	20,515	1932	*	
1904	2,850	9,298	1933	40,303	282,325
1905	3,933	16,221	1934	*	
1906	4,032	40,320	1935	62,509	413,228
1907	6,405	57,720	1936	*	
1908	10,582	80,822	1937	94,491	734,443
1909	7,942	62,588	1938	*	
1910	16,570	113,887	1939	47,954	375,005
1911	8,858	67,430	1940	*	
1912	10,512	105,120	1941	241,620	2,069,220
1913	9,632	77,056	1942	*	*
1914	11,438	114,380			
1915	30,271	283,461	Totals	1,772,380	$17,301,102

* Combined under 'Unapportioned.'

[1] See U. S. Geol. Surv.; Mineral Resources of U. S., 1886, pp. 6 and 696.

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

MARBLE

Bibliography: State Mineralogist Reports XII-XV (inc.), XVII-XXX (inc.), XXXIV, XXXV, XXXVII. Bulletin 38. U. S. Bur. of Mines Bull. 106.

In recent years the marble output has been showing a steady decline as has that of other building stone. The presence of artificial marbles and use of terrazzo which are cheaper is probably the major factor for this. During 1942 in California there was produced in Santa Barbara County some limestone used as building stone and in Solano County some travertine. The annual details were concealed under the 'Unapportioned' item so as not to reveal the output of either operator.

The 1941 production was valued at $14,448 (including some onyx and travertine from Solano County, and a small amount of limestone used as building stone and flagstone coming from a single operator each in Los Angeles and Santa Barbara counties). The marble came from a single quarry in Tuolumne county.

California has many beautiful and serviceable varieties of marble, suitable for almost any conceivable purpose of construction or decoration. In the decorative class are deposits of onyx marble of beautiful coloring and effects. There is also serpentine marble suitable for electrical switchboard use.

Marble Production of California, by Years

Data on annual production since 1887, as compiled by the State Mining Bureau, follows. Previous to 1894 no records of amounts were preserved.

Total Production of Marble in California, by Years

Year	Cubic feet	Value	Year	Cubic feet	Value
1887	----------	$5,000	1916	25,954	$50,280
1888	----------	5,000	1917	24,755	62,950
1889	----------	87,030	1918	[a]17,428	49,898
1890	----------	80,000	1919	25,020	74,482
1891	----------	100,000	1920	[b]29,531	92,899
1892	----------	115,000	1921	30,232	98,395
1893	----------	40,000	1922	38,321	127,792
1894	38,441	98,326	1923	28,015	124,919
1895	14,864	56,566	1924	[b]61,579	140,253
1896	7,889	32,415	1925	35,664	116,105
1897	4,102	7,280	1926	34,806	119,999
1898	8,050	23,594	1927	[b]42,308	103,689
1899	9,682	10,550	1928	[b]34,324	82,190
1900	4,103	5,891	1929	[b]72,881	93,661
1901	2,945	4,630	1930	[b]65,775	82,194
1902	19,305	37,616	1931	[b]37,776	81,760
1903	84,624	97,354	1932	[b]25,506	42,505
1904	55,401	94,208	1933	[b]9,039	23,178
1905	73,303	129,450	1934	[b]7,185	10,759
1906	31,400	75,800	1935	(b)	9,884
1907	37,512	118,066	1936	(b)	23,011
1908	18,653	47,665	1937	(b)	23,667
1909	79,600	238,400	1938	[a] (b)	6,015
1910	18,960	50,200	1939	(b)	14,822
1911	20,201	54,103	1940	(b)	15,189
1912	27,820	74,120	1941	(b)	14,448
1913	41,654	113,282	1942	*	*
1914	25,436	48,832			
1915	22,186	41,518	Total value	----------	$3,567,840

[a] Includes onyx and serpentine.
[b] Includes onyx and travertine.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

ONYX AND TRAVERTINE

Bibliography: State Mineralogist Reports XII-XV (inc.), XVII, XVIII, XXI, XXIII, XXXI, XXXIV. Bulletin 38.

Onyx and travertine are known to exist in a number of places in California, but there has been only a small and irregular production since the year 1896. In 1942 there was one producer of travertine in Solano County. The 1942 output showed a decrease in both quantity and value from that of 1941, the figures of which are combined with marble. This material is used in terrazzo and for ornamental purposes.

Onyx Production of California, by Years

Production by years has been as follows:

Year	Value	Year	Value
1887	*	1926	$7,575
1888	$900	1927	*
1889	900	1928	*
1890	900	1929	*
1891	1,500	1930	*
1892	2,400	1931	*
1893	1,800	1932	*
1894	27,000	1933	*
1895	20,000	1934	*
1896	12,000	1935	*
1918	24,000	1936	*
1919	*	1937	*
1920		1938	*
1921	1,294	1939	*
1922	3,320	1940	*
1923	2,510	1941	*
1924	*	1942	*
1925	16,120	Total value	$122,219

* See under Marble.

SANDSTONE

Bibliography: State Mineralogist Reports XII-XV, XVII, XVIII, XXI, XXIII, XXVI-XXVIII (inc.), XXXIV, XXXV. Bulletin 38. U. S. Bur. of Mines, Bull. 124.

An unlimited amount of high-grade sandstone is available in California, but the wide use of concrete in buildings of every character, as well as the popularity of a lighter-colored building stone, has curtailed production in this branch of the mineral industry during recent years almost to the vanishing point. In 1942 there was a total of 1,532 tons or about 20,427 cu. ft. of sandstone produced in California valued at $8,587 at the quarry. This came from two properties in Monterey County; and one each in Colusa, Los Angeles, Napa, San Bernardino, San Luis Obispo, and Shasta counties.

Practically all of the material was flagstone which is used in garden walks, fountains, walls and fireplaces to give effect to Spanish and English types of homes. The material reported from Monterey and San Luis Obispo counties is in reality an indurated shale of the Monterey series, of a cream color and utilized as a building stone.

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Sandstone Production of California, by Years

Amount and value, so far as contained in the records of this Bureau, are presented herewith, with total value from 1887 to date:

Year	Cubic feet	Value	Year	Cubic feet	Value
1887		$175,000	1916	17,270	$10,271
1888		150,000	1917	31,090	7,074
1889		175,598	1918	900	400
1890		100,000	1919	5,400	3,720
1891		100,000	1920	10,500	2,300
1892		50,000	1921	10,150	2,112
1893		26,314	1922	900	1,100
1894		113,592	1923	7,000	13,000
1895		35,373	1924	6,700	3,600
1896		28,379	1925	14,704	14,362
1897		24,086	1926	34,100	17,500
1898		46,384	1927	222,900	205,400
1899	56,264	103,384	1928	134,100	43,250
1900	378,468	254,140	1929	177,655	49,881
1901	266,741	192,132	1930	160,704	56,404
1902	212,123	142,506	1931	110,244	30,960
1903	353,002	585,309	1932	41,793	13,286
1904	363,487	567,181	1933	25,980	10,888
1905	302,813	483,268	1934	21,738	14,245
1906	182,076	164,068	1935	38,426	9,268
1907	159,573	148,148	1936	24,705	9,180
1908	93,301	55,151	1937	73,190	15,680
1909	79,240	37,032	1938	43,107	9,384
1910	165,971	80,443	1939	54,380	12,494
1911	255,313	127,314	1940	27,992	13,083
1912	66,487	22,574	1941	60,958	13,143
1913	62,227	27,870	1942	26,427	8,587
1914	111,691	45,322			
1915	63,350	8,438	Totals		$4,659,478

SERPENTINE

Bibliography: State Mineralogist Report XV. Bulletin 38.

Serpentine has not been produced in California to a very large extent at any time. A single deposit, that on Santa Catalina Island, has yielded the principal output to date. Some material was shipped from there in 1917 and 1918, being the only output recorded since 1907. It was used for decorative building purposes and for electrical switchboards. As there was but a single operator, the figures were combined with those of marble output for those years.

The production of serpentine prior to 1919 was 'verde antique' which is used as an ornamental stone and often classed as a marble. In recent years experimental tests have proved several possible commercial applications to which this mineral might be put such as an admix in cement, in the manufacture of magnesium chemicals, in terrazzo, as a substitute for soapstone, and as a filler. During 1938 there was a small shipment of serpentine from one property in San Bernardino County. The annual details are concealed in the 'Unapportioned' item so as not to reveal the output of an individual.

Serpentine Production of California, by Years

The following table shows the amount and value of serpentine from 1895 as recorded by this bureau:

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Serpentine Production in California, by Years

Year	Cubic feet	Value	Year	Cubic feet	Value
1895	4,000	$4,000	1905		
1896	1,500	6,000	1906	847	$1,694
1897	2,500	2,500	1907	1,000	3,000
1898	750	3,000	1917	[a]	[a]
1899	500	2,000	1918	[b]	[b]
1900	350	2,000	1919		
1901	89	890	1938	[b]	[b]
1902	512	5,065			
1903	99	800			
1904	200	2,310	Totals	12,347	$33,259

[a] Under 'Unapportioned.'
[b] See under Marble.

SLATE

Bibliography: State Mineralogist Reports XV, XVIII, XXIV, XXVIII, XXXIV. Bulletin 38. U. S. Geol. Surv., Bull. 586. U. S. Bur. of Mines, Bull. 218.

Slate was first produced in California in 1889. Up to and including 1910 such production was continuous, but since then it has been irregular. Large deposits of excellent quality are known in the State, especially in El Dorado, Calaveras and Mariposa counties, but the demand has been light owing principally to competition of cheaper roofing materials.

The slate output in California came from a single property in El Dorado County, the annual details are concealed under the 'Unapportioned' item so as not to reveal the production of an individual. The 1942 production showed an increase in both amount and value over that of 1941, which came from properties in Amador, El Dorado, and Tuolumne counties. The 1941 and 1942 slate output totaled 16,596 tons valued at $80,321.

Total Production of Slate in California

A complete record of amount and value of slate produced in California follows:

Year	Squares	Value	Year	Squares	Value
1889	4,500	$18,089	1916		
1890	4,000	24,000	1920	8	$80
1891	4,000	24,000	1921		
1892	3,500	21,000	1922	200	2,400
1893	3,000	21,000	1923		
1894	1,800	11,700	1926	[a]	7,371
1895	1,350	9,450	1927	[b]2,686	17,960
1896	500	2,500	1928	[b]4,075	31,263
1897	400	2,800	1929		
1898	400	2,800	1930	*[b]8,280	71,347
1899	810	5,900	1931		
1900	3,500	26,250	1932	*[b]8,234	55,182
1901	5,100	38,250	1933	[b]5,343	31,958
1902	4,000	30,000	1934	[b]5,065	24,245
1903	10,000	70,000	1935	[a]	40,912
1904	6,000	50,000	1936	[a]	49,818
1905	4,000	40,000	1937	[a]	32,572
1906	10,000	100,000	1938	[b]6,871	30,281
1907	7,000	60,000	1939	[b]5,777	28,327
1908	6,000	60,000	1940	[b]4,777	18,031
1909	6,961	45,660	1941		
1910	1,000	8,000	1942	*[b]16,596	80,321
1911					
1915	1,000	5,000	Totals		$1,203,467

* Annual details concealed under 'Unapportioned.'
[a] Quantity not shown as both 'squares' and 'tons' included.
[b] Tons.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

MISCELLANEOUS STONE

Bibliography: State Mineralogist Reports XII-XXVIII (inc.), XXXI-XXXII, XXXV-XXXVII. Bulletin 38; also annual statistical bulletins from 1915 to date.

'Miscellaneous stone' is the name used throughout this report as the title for that branch of the mineral industry covering crushed rock of all kinds, paving blocks, sand and gravel, and pebbles for grinding mills. The foregoing are very closely related from the standpoint of the producer; therefore it has been found to be most satisfactory to group these items as has been done in recent reports of this Bureau. So far as it has been possible to do so, crushed rock production has been subdivided into the various uses to which the product was put. It will be noted, however, a very large percentage of the output has been tabulated under the heading 'Unclassified.' This is necessary because of the fact that many of the producers have no way of telling to what specific use their rock was put (or at least the proportions to each use) after they have quarried and sold the same to distributors and contractors.

In addition to amounts produced by commercial firms, both corporations and individuals, there is hardly a county in the State but uses more or less gravel and broken rocks on its roads. Of much of this, particularly in the country districts, there is no definite record kept.

During 1942 there was a total of 45,455,085 tons of miscellaneous stone, including sand, gravel, crushed rock, rubble, and riprap produced in California and having a value of $27,281,342, as compared with 34,626,035 tons worth $19,559,883 in 1941. The 1942 output was the largest in amount and value ever reported in this State. As in the past Los Angeles County led in the annual output of these products, its 1942 yield being worth $5,087,331; Alameda County second with an output worth $3,914,518; Shasta County third with an output worth $2,581,053; followed in turn by San Bernardino, Sacramento, Riverside, Contra Costa, and Napa counties all with an output worth over a million dollars. Under this heading every county in the State contributed with the exception of Kings and Sutter counties in 1942.

Paving Blocks

The 1942 output of paving blocks came from a single quarry in Sacramento County. The annual details are concealed under the 'Unapportioned' item so as not to reveal production of either operator.

The paving block industry has decreased materially of recent years, practically to the vanishing point, because of the increased construction of smoother pavements demanded by motor vehicle traffic. The blocks made in Solano County were of basalt; those from Sonoma are of basalt, andesite, and some trachyte, while those from Madera, Placer, Riverside, San Bernardino, and San Diego are of granite; and those from San Mateo County a sandstone.

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The amount and value of paving block production, annually, since 1887 has been as follows:

Year	Amount M	Value	Year	Amount M	Value
1887	*10,000	$350,000	1915	3,285	$171,092
1888	10,500	367,500	1916	1,322	54,362
1889	7,303	297,236	1917	938	38,567
1890	7,000	245,000	1918	372	17,000
1891	5,000	150,000	1919	27	1,350
1892	*3,000	96,000	1920	63	3,155
1893	2,770	96,950	1921	4	280
1894	2,517	66,981	1922	72	3,924
1895	2,332	75,338	1923	15	880
1896	4,161	77,584	1924	11	935
1897	1,711	35,235	1925	27	1,350
1898	1,144	21,725	1926		
1899	305	7,861	1927	41	2,057
1900	1,192	23,775	1928	25	1,658
1901	1,920	41,075	1929		
1902	3,502	112,437	1930		
1903	4,854	134,642	1931	[a] 66	5,900
1904	3,977	161,752	1932		
1905	3,408	134,347	1934	2	75
1906	4,203	173,432	1935		
1907	4,604	199,347	1938		
1908	7,660	334,780	1939	[a] 9	439
1909	4,503	199,803	1940		
1910	4,434	198,916	1941	[a] 155	30,862
1911	4,141	210,819	1942	[a]	[a]
1912	11,018	578,355			
1913	6,364	363,505	Totals	136,004	$5,356,933
1914	6,053	270,598			

* Figures for 1887-1892 (inclusive) are for Sonoma County only, as none are available for other counties during that period though Solano County quarries were then also quite active.

[a] Annual details concealed under 'Unapportioned.'

Grinding-Mill Pebbles

The 1942 output of grinding mill pebbles in California came from a single property in San Diego County. The annual details are combined under the 'Unapportioned' item so as not to reveal the output of an individual. The 1942 production was a decrease in amount and value as compared with that of 1941 which came from two properties in San Diego County and one in Calaveras County.

The amount and value of grinding-mill pebbles, annually, follows:

Year	Tons	Value	Year	Tons	Value
1915	340	$2,810	1931		
1916	20,232	107,567	1932	* 25	$211
1917	21,450	90,538	1933		
1918	8,628	61,268	1934	* 300	3,018
1919	2,607	19,272	1935		
1920	2,104	17,988	1936	* 961	8,356
1921	247	1,418	1937		
1922	1,571	7,628	1938	* 960	4,800
1923	2,650	14,936	1939		
1924	434	2,969	1940	* 482	982
1925	215	1,385	1941		
1926	102	612	1942	* 573	2,650
1927	288	1,800			
1928	372	2,408	Totals	64,707	$283,841
1929					
1930	* 166	1,225			

* Annual details concealed under 'Unapportioned.'

Sand and Gravel

A considerable part of the gravel excavated is passed through grading and washing plants, and the material over 2 inches in size is crushed. Much of it is utilized in concrete mixtures. Most of the gravel used

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

for road surfacing and repairs as well as that for railroad ballast is creek-run or pit-run material which is spread upon the roads without undergoing any grading or washing.

The 1942 sand and gravel total output was 27,796,566 net tons valued at $15,295,252, as compared with 24,836,151 tons worth $12,127,785 in 1941.

Included in the above total for 1942 are 80,026 net tons of molding sand valued at $279,383, which came from two properties in Contra Costa County and one each in Los Angeles, Orange, Riverside, Sacramento, San Diego, San Luis Obispo, San Mateo, and Ventura counties. The 1942 output of molding sand showed an increase in both amount and value over the 1941 production which was 57,068 tons worth $191,614.

The distribution of the 1942 output of sand and gravel by counties is given in the following table:

County	Sand and gravel	
	Tons	Value
Alameda	3,630,487	$2,312,112
Amador	51,199	17,321
Butte	148,015	96,861
Calaveras	25,826	20,415
Contra Costa[a]	523,406	372,761
Del Norte	24,597	17,209
Fresno	207,638	181,004
Glenn	223,679	79,931
Humboldt	153,845	52,448
Imperial	132,539	62,407
Inyo	143,496	151,559
Kern	221,194	196,606
Lake	79,267	32,365
Los Angeles[a]	6,959,705	2,897,375
Mendocino	138,586	57,368
Merced	232,139	163,796
Modoc	10,715	7,970
Monterey	320,641	219,465
Orange[a]	744,467	435,824
Placer	74,444	67,581
Plumas	15,735	14,300
Riverside[a, b, c]	547,774	326,889
Sacramento[a]	921,202	706,283
San Bernardino	1,115,517	659,837
San Diego[a, b, c]	470,633	574,150
San Joaquin	785,611	448,156
San Luis Obispo[a]	106,552	86,012
Santa Barbara	141,643	130,470
Santa Clara	241,140	158,689
Shasta	4,716,026	2,240,315
Siskiyou	27,573	24,388
Stanislaus	338,565	219,312
Trinity	10,973	6,573
Tulare	38,298	30,298
Tuolumne	149,925	110,390
Ventura[a]	1,128,937	399,109
Yolo	395,334	150,066
Yuba	734,652	393,497
Alpine, Colusa, El Dorado, Lassen, Madera, Marin, Mariposa, Mono, Napa, Nevada, San Benito, San Mateo, Santa Cruz, Sierra, Sonoma, Tehama*	1,864,591	1,174,140
Totals	27,796,566	$15,295,252

* Combined to conceal output of producers in each.
[a] Includes molding sand.
[b] Includes filter sand.
[c] Includes blast sand.

Crushed Rock

To list the kinds and varieties of rock utilized commercially under this heading would be to run almost the entire gamut of the classification scale. Much depends on the kind available in a given district.

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Crushed Rock Production, by Counties, for 1942

County	Macadam and ballast		Rubble and riprap		Concrete		Unclassified		Totals	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Alameda	204,369	$160,217	*	*	87,977	$66,735	2,953,634	$1,360,451	3,245,980	$1,587,403
Butte	2,681	2,412							2,681	2,412
Contra Costa	219,713	220,048	*	*	75,615	70,386	507,756	430,877	803,084	721,311
Humboldt							11,564	13,877	11,564	13,877
Kern					192,304	163,282	74,272	89,272	266,576	252,554
Los Angeles	38,000	21,750	*	*	255,525	123,034	[a, d]1,974,730	891,281	2,268,255	1,036,065
Merced							63,800	20,400	63,800	20,400
Modoc	47,715	[c]41,808							47,715	41,808
Riverside	21,715	11,421	*	*	*	*	*	*	21,715	11,421
Sacramento	*	*	*	*			622,333	718,767	622,333	718,767
San Bernardino	523,613	320,711	*	*	709,011	713,668	*	*	1,232,624	1,034,379
San Diego	*	*	41,416	$57,932	151,397	141,858			192,813	199,790
San Mateo	[a]100,588	92,138	1,040	1,403	*	*	*	*	101,628	93,541
Shasta	[b]385,876	235,798					[a]129,113	104,940	514,989	340,738
Siskiyou	*	*			*	*	15,009	18,759	15,009	18,759
Sonoma	40,727	25,754					*	*	40,727	25,754
Butte, El Dorado[a], Fresno, Marin, Napa, Sacramento, San Benito, San Diego, Santa Clara, Siskiyou[c], Solano, Stanislaus, Ventura, Yuba*	1,902,985	1,201,433							1,902,985	1,201,433
Alameda, Contra Costa, Del Norte, El Dorado, Fresno, Los Angeles, Marin, Napa, Placer, Riverside, Sacramento, San Bernardino, San Francisco, Santa Cruz, Ventura, Yuba*			4,165,119	3,236,637					4,165,119	3,236,637
Butte, El Dorado, Fresno, Marin, Napa, Riverside, San Francisco, San Luis Obispo, San Mateo, Santa Cruz, Siskiyou, Stanislaus, Ventura*					605,453	673,450			605,453	673,450
Butte, El Dorado, Fresno, Inyo[a, d], Lassen[a], Lake, Monterey[a], Orange[a], Riverside, San Bernardino, San Francisco, San Joaquin, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Trinity, Ventura*	*						1,534,469	755,591	1,534,469	755,591
Totals	3,487,982	$2,333,490	4,207,575	$3,295,972	2,077,282	$1,952,413	7,886,680	$4,404,215	17,659,519	$11,986,090

* Combined to conceal the output of operators in each.
[a] Includes decomposed granite.
[b] Includes slag.
[c] Includes volcanic cinders.
[d] Includes granules for roofing and terrazzo.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Those which give the most satisfactory service are the basalts and other hard, dense, igneous rocks which break with sharp, clean edges. In many localities, river-wash boulders form an important source of such material. In such cases, combined crushing and washing plants obtain varying amounts of sand and gravel along with the crushed sizes. In Sacramento and Butte counties the tailings piles from the gold dredgers are the basis of like operations.

The values given are based on the selling price, f. o. b. cars, barges, or trucks, at the quarry. The 1942 output amounted to a total of 17,659,519 tons valued at $11,986,090 as compared with 9,789,884 tons worth $7,432,098 in 1941. The accompanying table gives a breakdown of crushed rock by counties.

Miscellaneous Stone Production of California, by Years

The amount and value, annually, of crushed rock (including macadam, ballast, rubble, riprap, and that for concrete), and sand and gravel, since 1893, follow:

Crushed Rock, Sand and Gravel, by Years

Year	Tons	Value	Year	Tons	Value
1893	371,000	$456,075	1919	6,919,188	$3,678,322
1894	661,900	664,838	1920	9,792,122	6,782,414
1895	1,254,688	1,095,939	1921	10,914,145	7,834,640
1896	960,619	839,884	1922	13,049,644	10,366,231
1897	821,123	600,112	1923	19,840,301	15,379,838
1898	1,177,365	814,477	1924	21,451,129	15,962,476
1899	964,898	786,892	1925	23,819,137	17,407,113
1900	789,287	561,642	1926	24,987,606	19,859,261
1901	530,396	641,037	1927	25,126,691	18,912,994
1902	2,056,015	1,249,529	1928	27,471,794	17,328,044
1903	2,215,625	1,673,591	1929	27,104,618	17,840,159
1904	2,296,898	1,641,877	1930	23,514,168	16,430,027
1905	2,624,257	1,716,770	1931	15,848,313	11,848,531
1906	1,555,372	1,418,406	1932	11,361,564	7,183,643
1907	2,288,888	1,915,015	1933	11,181,156	6,871,581
1908	3,998,945	3,241,774	1934	16,148,275	7,131,330
1909	5,531,561	2,708,326	1935	9,041,876	5,571,041
1910	5,827,828	2,777,690	1936	28,528,079	16,578,238
1911	6,487,223	3,610,357	1937	28,254,740	16,917,683
1912	8,044,937	4,532,598	1938	19,051,677	11,734,038
1913	9,817,616	4,823,056	1939	18,693,896	10,316,787
1914	9,288,397	3,960,973	1940	24,184,186	12,181,564
1915	10,879,497	4,609,278	1941	34,626,035	19,559,883
1916	9,951,089	4,009,590	1942	45,455,085	27,281,342
1917	8,069,271	3,505,662			
1918	6,641,144	3,325,889	Totals	581,471,364	$378,138,457

A comparison of the above table of annual production of these materials with the similar table for cement (see *ante*) reveals the fact that the important growth of the crushed rock and gravel business was coincident with the rapid development of the cement industry from the year 1902.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CHAPTER FIVE

INDUSTRIAL MATERIALS

Bibliography: State Mineralogist Reports XII-XXXVII (inc.). Bulletin 38. Min. & Sci. Press, Vol. 114, March 10, 1917. Spurr and Wormser, "Marketing of Metals and Minerals." "Non-Metallic Minerals," by R. B. Ladoo. "Industrial Minerals and Rocks," A. I. M. E., 1937. See also under each substance.

The following mineral substances have been arbitrarily arranged under the general heading of 'Industrial Materials,' as distinguished from those which have clearly a defined classification, such as metals, salines, structural materials, etc.

These materials, many of which are mineral earths, are, with four or five exceptions, as yet produced on a comparatively small scale. The possibilities of development along several of these lines are large, and with increasing transportation and other facilities, together with steadily growing demands, the future for this branch of the mineral industry in California is promising. There is scarcely a county in the State but might contribute to the output.

Up to within the last few years, at least, production has been in the majority of instances dependent upon more or less of a strictly local market, and the annual tables show the results of such a condition, not only in the widely varying amounts of a certain material produced from year to year, but in widely varying prices of the same material.

The more important of these minerals thus far exploited, so far as shown by value of the output, are barytes, bentonite (fuller's earth), pottery clay, diatomite, dolomite, gypsum, limestone, mineral water, pumice and volcanic ash, pyrite, silica, and soapstone and talc.

In 1937 the mineral zircon was added to this group. The material mined was used as an abrasive and a refractory.

This group as a whole showed an increase in total value from $8,502,571 in 1941 to $8,606,428 in 1942.

The following table gives the comparative figures for the amounts and value of industrial minerals produced in California during the years 1941 and 1942:

Substance	1941		1942		
	Amount	Value	Amount	Value	Increase+ Decrease— Value
Asbestos	*	*	8,319 lbs.	$836	* —
Bentonite	18,369 tons	$164,582	7,453 tons	67,503	$97,097—
Carbon dioxide	138,862 M. cu.ft.	258,503	193,143 M cu. ft.	310,000	51,437+
Clay (pottery)	551,347 tons	1,217,466	622,958 tons	1,200,293	17,173—
Dolomite	22,300 tons	64,595	142,552 tons	413,469	348,874+
Gem material		870		570	300—
Gypsum	432,784 tons	854,184	425,268 tons	791,892	62,292—
Limestone	459,153 tons	801,868	474,764 tons	1,155,352	353,484+
Mineral water	17,746,256 gals.	988,520	17,559,686 gals.	567,897	420,623—
Pumice and volcanic ash	85,309 tons	283,663	55,603 tons	209,539	74,124—
Silica (quartz and glass sand)	137,660 tons	514,266	193,174 tons	692,762	178,496+
Soapstone and talc	47,935 tons	525,396	47,782 tons	545,509	20,113+
Sulphur	9,495 tons	209,296	*	*	* —
Unapportioned		[a]2,619,302		[b]2,650,806	31,504+
Total values		$8,502,571		$8,606,428	
Net increase					$103,857

* Included under "Unapportioned."

[a] Includes asbestos, barite, calcium silicate, diatomite, feldspar, lithia, mica, mineral paint, pyrite, sillimanite group, strontium, zircon.

[b] Includes barite, diatomite, feldspar, lithium salts, mineral paint, pyrite, sillimanite group, strontium, and sulphur.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

ASBESTOS

Bibliography: State Mineralogist Reports XII-XIX (inc.), XXII, XXVII (inc.), XXIX, XXXI-XXXII, XXXIV-XXXVII (inc.). Bulletins 38, 91. Canadian Dept. of M., Mines Branch Bulletin 69. Min. and Sci. Press, April 10, 1920, pp. 531-533. Eng. & Min. Jour.-Press, Vol. 113, pp. 617-625, 670-677. Asbestology, Vol. 5, No. 7, July, 1927.

During 1942 there was a production of asbestos in California totaling 8,319 pounds and valued at $836 and coming from a single property each in Napa, Placer, and Shasta counties. The 1942 output was a decrease from 31,741 pounds worth $2,867 in 1941 which came from a single property each in Inyo and Napa counties.

Of the 1942 output that from Napa County was the chrysotile variety and that from Placer and Shasta counties was tremolite asbestos.

There are two varieties of asbestos, amphibole and serpentine. The most valuable and widely used is the serpentine or chrysotile variety. Chrysotile asbestos has short strong fibers varying in length from $\frac{1}{8}$ of an inch to three inches but mostly less than one inch. The value of the material varies greatly as to the length of the fiber; the longer demanding a premium. It is used as insulation for heat and electricity, in brake linings, steam packing, pipe coverings, in paint, waterproof paper roofing, cement, stucco, and plasters, in heat resisting textiles, as gloves, curtains, cord, etc.

The amphibole variety may be any one of several minerals of the amphibole group, the fibers of this type are weak and often brittle, and they are much more abundant but their uses are limited and value small; being restricted to heat insulation, chemical filters, and sometimes as a filler.

Asbestos Production of California, by Years

Total amount and value of asbestos production in California since 1887, as given in the records of this Bureau, are as follows:

Year	Tons	Value	Year	Tons	Value
1887	30	$1,800	1914	51	$1,530
1888	30	1,800	1915	143	2,860
1889	30	1,800	1916	145	2,380
1890	71	4,260	1917	136	10,225
1891	66	3,960	1918	229	9,903
1892	30	1,830	1919	131	6,240
1893	50	2,500	1920		
1894	50	2,250	1921	410	19,275
1895	25	1,000	1922	50	1,800
1896			1923	20	200
1897			1924	70	4,750
1898	10	200	1925	25	1,650
1899	30	750	1926		
1900	50	1,250	1927	13	1,160
1901	110	4,400	1928		
1902			1929	219	6,175
1903			1930		
1904	10	162	1931		
1905	112	2,625	1932	309	3,274
1906	70	3,500	1934		
1907	70	3,500	1935		
1908	70	6,100	1936		
1909	65	6,500	1941	16	2,867
1910	200	20,000	1942	4	836
1911	125	500			
1912	90	2,700	Totals	3,412	$149,687
1913	47	1,175			

* Annual details concealed under 'Unapportioned.'

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

BARITE

Bibliography: State Mineralogist Reports XXII, XIV, XV, XVII, XXI-XXVIII (inc.), XXXIV-XXXV (inc.), XXXVII. Bulletins 38, 87. Eng. & Min. Jour.-Press, Vol. 114, p. 109, July 15, 1922; Vol. 115, pp. 319-324, Feb. 17, 1923. U. S. Bureau of Mines, Inform. Circ. 6221, 6223.

During 1941 the barite (including some witherite) produced in California came from three properties, one each in Mariposa, Nevada and Tulare counties, the annual details being concealed in the 'Unapportioned' items so as not to reveal the output of either operator. This material was consumed in the manufacture of lithopone, a heavy-gravity oil-well drilling-mud, fillers, and barium chemicals.

Commercial production of barite in California for 1940 and 1941 amounted to a total of 57,728 net tons worth $377,229 f.o.b. rail shipping point.

Barite's largest use in the United States is in the manufacture of lithopone, which is a chemically-prepared white pigment containing approximately 70% barium sulphate and 30% zinc sulphide. This is one of the principal constituents of 'flat' wall paints. Other important uses for barite, after washing and grinding, are as an inert pigment and filler in paint, paper, linoleums, oilcloth and rubber manufacture, and in the preparation of a number of chemicals including barium binoxide, carbonate, chloride, nitrate, the sulphate precipitated, or 'blanc fixe,' and in medicine.

Present (Sept. 23, 1943) quotations for barite (95% $BaSO_4$) vary from $8.50 to $9.00 per ton, crude, f.o.b. rail shipping point. Most barite has to be washed and acid treated to remove iron stains or other impurities before being suitable for paint use.

Known occurrences of this mineral in California are located in Inyo, Los Angeles, Mariposa, Monterey, Nevada, San Bernardino, Shasta, Santa Barbara and Tulare counties. The deposit at El Portal, in Mariposa County, has given the largest commercial production to date, in part witherite (barium carbonate, $BaCO_3$). Witherite has also been found in Shasta County, but no shipments have yet been made from the deposit. The carbonate is especially desirable, as it is a simpler and hence a cheaper source for preparation of barium chemicals, notably the nitrate which is used in priming mixture for incendiary bombs.

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Total Barite Production of California

The first recorded production of barite in California, according to the statistical reports of the State Mining Bureau, was in 1910. The annual figures are as follows:

Year	Tons	Value	Year	Tons	Value
1910	860	$5,640	1927	17,993	$90,617
1911	309	2,207	1928	13,406	55,888
1912	564	2,812	1929	26,796	168,829
1913	1,600	3,680	1930	19,783	133,107
1914	2,000	3,000	1931	27,832	156,647
1915	410	620	1932	8,507	49,409
1916	1,606	5,516	1933	8,405	49,595
1917	4,420	25,633	1934	21,769	125,514
1918	100	1,500	1935	22,979	133,810
1919	1,501	18,065	1936		
1920	3,029	20,795	1937 *	41,882	245,392
1921	901	4,809	1938		
1922	3,370	18,925	1939 *	66,228	396,218
1923	2,925	16,058	1940		
1924			1941 *	57,728	377,229
1925			1942	*	*
1926	4,978	38,165			
			Totals	361,881	$2,149,690

* Annual details concealed under 'Unapportioned.'

BENTONITE (Fuller's Earth)

Bibliography: State Mineralogist Reports XIV, XVII, XVIII, XXI, XXIII, XXV-XXVI (inc.), XXXIV, XXXVI-XXXVII. Bulletins 83, 91. U. S. Bureau of Mines, Bulletin 71, Technical Paper 609. Eng. & Min. Jour.-Press, Vol. 121, pp. 837-842, May 22, 1926.

During 1942 the output of bentonite clay amounted to a total of 7,453 net tons, valued at $67,503, and came from four properties in San Bernardino County, two in Inyo County, and one each in Kern and San Diego counties. The 1942 production showed a decrease in both amount and value as compared with that of 1941, which was 18,369 tons, worth $164,582.

Previous to 1931 the Division of Mines classed this material under the heading of 'fuller's earth,' but it was thought advisable to change the name to bentonite, owing to the fact that much bentonite is employed in uses that can not be classed as fuller's earth and therefore had been classified in these reports under pottery clay. This was somewhat confusing. Bentonite is the name commonly applied to the clays of the montmorillonite and halloysite group ('rock soap').

Fuller's earth includes many kinds of unctuous clays. It is usually soft, friable, earthly, nonplastic, white and gray to dark green in color, and some varieties disintegrate in water. Production has come mainly from Calaveras and Solano counties, with other deposits noted also in Riverside, Fresno, Inyo and Kern counties.

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Bentonite Production of California, by Years

Bentonite including a small amount of fuller's earth was first produced commercially in this State in 1899, and the total amount and value of the output since that time are as follows:

Year	Tons	Value	Year	Tons	Value
1899	620	$12,400	1922	6,606	$48,756
1900	500	3,750	1923	3,650	55,125
1901	1,000	19,500	1924	5,290	67,295
1902	987	19,246	1925	5,280	91,842
1903	250	4,750	1926	23,552	250,192
1904	500	9,500	1927	13,018	154,764
1905	1,344	38,000	1928	53,232	501,743
1906	440	10,500	1929	15,541	170,563
1907	100	1,000	1930	12,522	177,964
1908	50	1,000	1931	13,960	222,583
1909	459	7,385	1932	4,295	57,670
1910	340	3,820	1933	4,605	60,621
1911	466	5,294	1934	6,168	69,325
1912	876	6,500	1935	10,204	68,372
1913	460	3,700	1936	10,185	165,131
1914	760	5,928	1937	8,425	140,261
1915	692	4,002	1938	9,374	113,164
1916	110	550	1939	11,284	138,854
1917	220	2,180	1940	10,360	174,002
1918	37	333	1941	18,369	164,582
1919	385	3,810	1942	7,453	67,503
1920	600	6,000			
1921	1,185	8,295	Totals	248,853	$2,473,666

CALCIUM SILICATE

Bibliography: State Mineralogist Report XXXIV, Mining and Metallurgy: Oct., 1935.

During 1942 no output of calcium silicate was reported in California but in 1941 one property in Kern County made some shipments to their mineral wool plant.

The annual details are concealed in the 'Unapportioned' item so as not to reveal its output.

The first commercial production of wollastonite was made in 1933 from a deposit operated by John T. Thorndyke in the Radamacher District in Kern County, and was shipped from Code's Siding to Los Angeles, where it is used to manufacture mineral wool. This was done by a new process in an electric furnace where the material is melted without the use of a flux and then blown to a fine fiber or wool by compressed air from jets. Mineral wool is an excellent insulating material for sound, heat and cold, and the manufacturer expects to use large quantities in proposed steel houses. This material, also, can be used in the manufacture of unbreakable glass. Experiments being conducted for several years by Mr. A. M. M. Russell, Testing Engineer of the State Harbor Commission, shows that wollastonite increases the strength of concrete.

Pyroxene is a silicate of calcium and magnesium and is found in crystalline limestone near the contact with intrusive igneous rocks and in basic igneous rocks such as gabbros. It is white to various shades of green, brown to black, having a hardness of 5 to 6 and a specific gravity 3.2 to 3.6.

Wollastonite is a calcium metasilicate ($CaSiO_3$) and usually found in crystalline limestone at the contact with intrusive igneous rocks.

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

It is a white to gray mineral, having a hardness of 4½ to 5 and a specific gravity of about 2.9.

Calcium silicate from 1934 to 1936 was classed in these California mineral production reports as wollastonite.

CARBON DIOXIDE GAS

Bibliography: State Mineralogist Reports XII, XXXVIII.

There were two companies producing carbon dioxide from wells near Niland, Imperial County, and one from springs near Hopland, Mendocino County, to a total of 193,143 M cu. ft. of carbon dioxide gas which was converted into 11,921 net tons of dry ice, worth $310,000, as compared with 138,862 M cu. ft. of gas which made 8,808 tons of dry ice, worth $258,563 in 1941. The 1942 output was the largest annual yield of commercial carbon dioxide in California.

Carbon dioxide gas is found many places in nature and is produced commercially from wells and springs whose waters are highly charged with the gas. It is used as a gas in the manufacture of carbonate beverages and dry ice, and in the chemical reduction of carbonates; as dry ice and liquified as a refrigerant, as a source of power, and in the chemical industry. It has been stated that the amount of butyl rubber is only limited by the amount of dry ice available.

Carbon dioxide gas was first produced commercially in California in 1894. This material came from a drift on the 575 level of the Santa Isabel shaft of the New Almaden Quicksilver mine at Almaden, Santa Clara County. The drift was bulkheaded and a pipe was placed through the bulkhead for the gas to be drawn off, it then being compressed into cylinders and used in the manufacture of soda water.

In 1933 carbon dioxide gas was again produced, this time from wells drilled near Niland, Imperial County. On November 1, 1934, a dry-ice plant was put into operation for condensation of the carbon dioxide produced from the above wells.

Carbon Dioxide Gas Production in California, by Years

Year	M cubic feet	Value
1894	80	$4,072
1895	800	12,000
1896	81	1,300
1897		
1933		
1934 *	15,440	1,822
1935		
1936 *	89,777	64,787
1937		
1938 *	131,189	13,799
1939		
1940	97,660	23,877
1941	138,862	258,563
1942	193,143	310,000
Totals	667,032	$690,220

* Annual details concealed under 'Unapportioned.'

Generated on 2024-09-24 15:59 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CLAY (Pottery)

Bibliography: State Mineralogist Reports I, IV, IX, XII-XV, XVIII-XXVIII (inc.), XXX-XXXIII (inc.), XXXV-XXXVII (inc.). Bulletins 38, 99. Preliminary Report No. 7, U. S. Bureau of Standards, Tech. Paper No. 262.

At one time or another in the history of the State, pottery clay has been mined in thirty-four of its counties. Of these, 21 contributed in 1942. In this report, 'pottery clay' refers to all clays used in the manufacture of red and brown earthenware, china and sanitary ware, flower pots, floor, faience and ornamental tiling, architectural terra cotta, sewer pipe, drain and roof tile, etc., and the figures for amount and value are relative to the crude material at the pit without reference to whether the clay was sold in the crude form or was immediately used in the manufacture of any of the above finished products by the producer. It does not include clay used in making brick and hollow building blocks.

There are many other important uses for clay besides pottery manufacture. Among these may be enumerated paper, cotton goods, and chemicals. Clays of the montmorillonite and halloysite group ('rock soap') are being utilized successfully in the manufacture of soaps and for filtering oils and as oil-well drilling mud, also as an earth filler in irrigating ditches which run through porous ground.

During 1942 there was a total of 54 properties in 21 counties which reported an output of 622, 958 net tons of pottery clay, valued at $1,200,-293 f.o.b. rail shipping point for the crude material, as compared with 51 properties in 19 counties producing 51,347 tons worth $1,217,466 in 1941.

Because of the fact that a given product often requires a mixture of several different clays, and that these are not all found in the same pit, it is necessary for most clay-working plants to buy some part of their raw materials from other localities. For these reasons, in compiling the clay industry figures much care is required to avoid duplications. So far as we have been able to segregate the figures, from the data sent in by the operatives, we have credited the clay output to the counties from which the raw material originated; and have deducted tonnages used in brick manufacture, as bricks are classified separately, herein.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

A tabulation of the direct returns from the producers, by counties, for the year 1942 is shown herewith:

Pottery Clay in 1942

County	Tons	Value	Used in the manufacture of
Alameda	[a]8,435	$9,668	Roofing, floor, and mantel tile; chimney, drain, and sewer pipe. Prepared clay, fire clay and sand, and various.
Amador	[a]119,596	254,771	Architectural terra cotta; fire clay and refractories; chimney, drain and sewer pipe; floor, mantel, and roofing tile; art pottery; electrical porcelain; and various.
Kern	[b]71,172	118,694	Oil well drilling mud.
Los Angeles	[b]30,480	67,272	Red earthenware, chimney, drain and sewer pipe; vents; floor, mantel, and roofing tile, art pottery; oil-well drilling mud, and various.
Orange	57,885	177,954	Architectural terra cotta; conduits and segment blocks; electrical, porcelain, and chinaware; refractories; vents; drain, floor, and mantel tile; art pottery; and various.
Placer	137,565	175,922	Architectural terra cotta; chimney, drain and sewer pipe; faïence; floor, mantel, and roofing tile; red earthenware; electrical porcelain; sanitary ware; and various.
Riverside	148,887	308,535	Conduit, sewer, and drain pipe; red earthenware; faïence, floor, mantel, and roofing tile; and various.
San Bernardino	4,757	32,224	Roofing, floor and mantel tile; drain and sewer pipe; red earthenware; refractories; fire sand and various.
San Diego	9,902	12,266	Floor, wall and roofing tile, refractories and various.
San Joaquin	1,894	4,782	Drain, floor, and roofing tile, ceramic cooking ware, and various.
Butte, Calaveras, Contra Costa, Fresno, Marin, Sacramento, Santa Barbara, Santa Clara, Stanislaus, Sutter, Ventura[b], *	32,385	38,205	Drain, roofing, and mantel tile; saggers; electrical porcelain; refractories; red earthenware; garden furniture; oil-well drilling mud; sewer, drain, and conduit pipe; prepared clay, light weight aggregate; and various.
Totals	622,958	$1,200,293	

[a] Includes fire sand.
[b] Includes oil-well drilling mud.
* Combined to conceal the output of operators in each.

The above figures do not include clay reported as used in the manufacture of brick and hollow building tile or the bentonite clays, as these are included under separate headings.

POTTERY CLAY PRODUCTS

The output of pottery clay products manufactured in California during 1942 had a total value of $16,270,372, and was a decrease from the 1941 total which was $17,394,733. The distribution by products for 1942 is shown in the following table:

Generated on 2024-09-24 16:10 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Product	Number of producers	Tons	Value
Architectural terra cotta, chimney pipe, and fueling	9	7,928	$666,334
Drain tile	14	9,692	170,361
Roofing tile	15	9,969	200,140
Floor, faience, mantel, and handmade tile	14		1,544,030
Sewer pipe	8	159,502	4,379,023
Red earthenware	6		248,096
Stoneware and chemical stoneware	4		341,693
Chinaware and semi-vitreous tableware	7		4,023,367
Electrical porcelain	4		529,482
Conduit tile	3	8,790	220,820
Ground fire clay and high temperature cement	4	10,307	392,893
Miscellaneous: sanitary ware, plumbing fixtures, clay shapes, gas tank blocks, garden furniture, groug, light-weight aggregate, dolls, vents, saggers, art pottery, specialties, sundries, and various	12		3,554,133
Total value			$16,250,372

In 1942, ceramic products showed a decrease in total value as compared with 1941 with the exception of sewer pipe, chinaware and semi-vitreous tableware, electrical porcelain, and ground fire clay and high temperature cement.

Pottery Clay Production of California, by Years

Amount and value of crude pottery clay output in California since 1887 are given in the following table:

Year	Tons	Value	Year	Tons	Value
1887	75,000	$37,500	1916	134,636	$146,538
1888	75,000	37,500	1917	166,298	154,602
1889	75,000	37,500	1918	112,423	166,788
1890	100,000	50,000	1919	135,708	245,019
1891	100,000	50,000	1920	203,997	440,689
1892	100,000	50,000	1921	225,120	362,172
1893	24,856	67,284	1922	277,232	473,184
1894	28,475	35,073	1923	376,863	697,841
1895	37,660	39,685	1924	417,928	651,857
1896	41,907	62,900	1925	537,587	674,376
1897	24,592	30,290	1926	801,461	806,509
1898	28,947	33,747	1927	867,419	872,661
1899	40,600	42,700	1928	887,807	1,394,950
1900	59,636	60,956	1929	839,949	1,127,527
1901	55,679	39,144	1930	938,586	795,517
1902	67,933	74,163	1931	332,680	408,931
1903	90,972	99,907	1932	167,284	204,890
1904	84,149	81,952	1933	141,629	211,711
1905	133,805	130,146	1934	190,510	245,900
1906	167,267	162,283	1935	240,014	377,969
1907	160,385	254,454	1936	382,823	646,920
1908	208,042	325,147	1937	354,669	705,200
1909	299,424	465,647	1938	304,564	582,608
1910	249,028	324,099	1939	305,517	611,599
1911	224,576	252,759	1940	324,399	687,871
1912	199,605	215,683	1941	551,347	1,217,363
1913	231,179	261,273	1942	622,958	1,200,293
1914	179,948	167,552			
1915	157,866	133,724	Totals	14,162,839	$19,744,656

DIATOMITE (Diatomaceous Earth)

Bibliography: State Mineralogist Reports II, XII-XV (inc.), XVII-XXVIII (inc.), XXXI-XXXIII, XXXV-XXXVI. Bulletins 38, 67, 91. Am. Inst. Min. Eng., Bull. 104, Aug. 1915, pp. 1539-1550. U. S. Bur. of Mines, Rep. of Investigations: Serial No. 2341, Jan. 1923. Eng. & Min. Jour.-Press, Vol. 115, pp. 1152-1154, June 30, 1923.

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Diatomite, also known as diatomaceous earth, infusorial earth, tripolite and kieselguhr, is very light (when dry a cubic foot weighs 18 to 20 pounds) and extremely porous, chalk-like material composed of pure silica (chalk, being calcareous) which has been laid down under water and consists of the remains of microscopical infusoria and diatoms. The former are animal remains, and the latter are from plants.

The most important deposits in California thus far known are located in Los Angeles, Monterey, Orange, San Luis Obispo, and Santa Barbara counties. The diatomaceous earth of marine origin has proved of superior quality for filtration uses which bring the higher prices. Infusorial or diatomaceous earths are also found in Contra Costa, Fresno, Kern, Plumas, San Benito, San Bernardino, San Joaquin, Shasta, Sonoma, and Tehama counties.

As about 75 percent of the California output is from a single operator, we have concealed the exact figures under the 'Unapportioned' item in the State and county totals. There were four producing properties during 1942, two were in Santa Barbara County, and one each in Los Angeles, and Monterey counties. The shipments during the year showed a decrease in amount and value as compared with 1941.

The material shipped was utilized for insulation of both heat and sound, filtration, paint, pigment, cement admixture, filters, abrasives and for clarification of gasoline and kerosene.

Total Production of Diatomite in California

The first recorded production of these materials in California occurred in 1889; total amount and value of output, to date, are as follows:

Year	Tons	Value	Year	Tons	Value
1889	39	$1,335	1917	24,301	$127,510
1890			1918	35,963	189,459
1891			1919	40,200	217,800
1892			1920	60,764	1,056,675
1893	50	2,000	1921		
1894	51	2,040	1922	*90,739	1,016,675
1895			1923		
1896			1924	*193,064	5,729,736
1897	5	200	1925		
1898			1926		
1899			1927	*275,403	1,995,923
1900			1928		
1901			1929		
1902	422	2,532	1930	*300,017	4,848,661
1903	2,703	16,015	1931		
1904	6,950	112,282	1932		
1905	3,000	15,000	1933	*203,228	3,104,154
1906	2,430	14,400	1934		
1907	2,531	28,948	1935		
1908	2,950	32,012	1936	*290,908	4,243,572
1909	500	3,500	1937		
1910	1,843	17,617	1938		
1911	2,194	19,670	1939	*266,358	3,941,941
1912	4,129	17,074	1940		
1913	8,645	35,968	1941	*	*
1914	12,840	80,350	1942	*	*
1915	12,400	62,000			
1916	15,322	80,649	Totals	1,859,949	$26,875,498

* Annual details concealed under 'Unapportioned.'

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

DOLOMITE

Bibliography: State Mineralogist Reports XV, XVII, XXVII, XXVIII, XXXI, XXXIII-XXXIV.

The 1942 output of dolomite in California totaled 142,552 net tons valued at $413,469 and came from two properties in Monterey County and one each in Inyo, Los Angeles, Riverside, San Benito, and Tuolumne counties, also but not included in the above figures was a tonnage of dolomite from Tuolumne County that was burnt for lime so included in the limestone figures. The 1942 production was the largest annual yield on record here in this State. The 1941 production amounted to 22,300 tons worth $64,595.

The material shipped during the year was utilized for magnesium metal, for steel furnace flux and refractories, stucco dash, terrazzo, kalsomine, poultry grit, artstone, in mineral-wool, and for the manufacture of carbon dioxide.

Dolomite Production of California, by Years

Previous to the 1915 statistical report of the State Mining Bureau, dolomite was included under limestone, as the two minerals are closely related chemically; but since dolomite, as such, has been found to have certain distinctive applications, we here give it a separate classification.

Amount and value of the output of dolomite, annually, have been as follows:

Year	Tons	Value	Year	Tons	Value
1915	4,192	$14,504	1930*	66,564	$161,245
1916	13,313	46,566	1931		
1917	27,911	66,416	1932	35,275	40,956
1918	24,560	79,441	1933	54,456	176,575
1919	24,502	67,953	1934*	108,645	304,984
1920	42,388	132,791	1935		
1921	31,195	99,155	1936	25,807	63,102
1922	52,409	114,911	1937	12,371	24,632
1923	69,519	142,615	1938	4,363	18,339
1924	28,843	71,271	1939	17,791	40,391
1925	42,852	104,900	1940	18,178	52,167
1926	68,640	119,313	1941	22,300	64,595
1927	45,976	79,442	1942	142,552	413,469
1928	38,379	85,342			
1929	58,644	156,928	Totals	1,181,625	$2,741,994

* Annual details concealed under 'Unapportioned.'

FELDSPAR

Bibliography: State Mineralogist Reports XV, XVII-XXVIII (inc.), XXX, XXXI, XXXIV-XXXVII (inc.). Bulletins 67, 91. U. S. Bureau of Mines, Bulletin 92. Eng. & Min. Jour.-Press, Vol. 115, pp. 535-538, Mar. 24, 1923.

During 1942 feldspar was produced and shipped from three properties in California, one each in Fresno, San Bernardino, and San Diego counties, the annual details being concealed under the 'Unapportioned' item to conceal the output of a property. The above production showed an increase in amount and value over the previous year.

The 1941-1942 total output of feldspar was 10,040 net tons worth $56,718.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The requirements of the pottery trade demand that in general the percentage of free silica associated with the feldspar be less than 20 percent, and in some cases the potters specify less than 5 percent. An important factor, also, is the iron-bearing minerals frequently present in pegmatites and granites, such as biotite (black mica), garnet, hornblende and black tourmaline. Feldspar for pottery uses should be practically free of these. The white, potash-mica, muscovite, is not particularly objectionable except that being in thin, flexible plates, it does not readily grind to a fineness required for the feldspar. It is also used in the manufacture of glass, enamel and sanitary ware, in soaps and abrasives, and as a binder for abrasive wheels, etc., all of which have similar specifications to that for pottery.

Total Feldspar Production in California

Total amount and value of feldspar production in California since the inception of the industry are given in the following table, by years:

Year	Tons	Value	Year	Tons	Value
1910	760	$5,720	1928	14,628	$93,745
1911	740	4,560	1929	13,327	78,404
1912	1,382	6,180	1930	5,014	35,654
1913	2,129	7,850	1931	4,795	59,921
1914	3,530	16,565	1932	2,294	15,988
1915	1,800	9,000	1933		
1916	2,630	14,350	1934	2,655	30,611
1917	11,792	46,411	1935	3,265	21,855
1918	4,132	22,061	1936	3,430	24,959
1919	1,272	12,965	1937	2,686	10,930
1920	4,518	26,189	1938	1,378	6,970
1921	4,349	28,343	1939	2,076	12,510
1922	4,587	37,109	1940	3,022	16,644
1923	11,100	81,800	1941		
1924	9,055	68,112	1942	10,040	56,718
1925	8,165	59,615			
1926	7,300	56,400	Totals	159,773	$1,054,245
1927	10,932	86,101			

* Annual details concealed under 'Unapportioned.'

FLUORSPAR

Bibliography: State Mineralogist Reports XVII, XVIII, XVIV, XXVI. Bulletins 67, 91. Eng. & Min. Jour.-Press, Vol. 177, pp. 489-492, Mar. 22, 1924.

During 1941 there was no commercial production of fluorspar reported in California.

Fluorspar, or calcium fluoride, CaF_2, is one of the most important nonmetallic minerals from an industrial standpoint. About 80 percent of the commercial mineral is prepared in the 'gravel' form and utilized as a flux in the manufacture of steel, for which use no substitute has yet been found.

In California deposits have been reported in Los Angeles, Mono, Riverside and San Bernardino counties. A previous commercial production was made in 1917-1918, when a total of 79 tons valued at $991 was shipped from Riverside County, and in 1933-1934 with 227 tons worth $3,631 coming from San Bernardino County.

Present quotations (Metal and Mineral Markets, Sept. 23, 1943) are: not less than 85 percent CaF_2 and not over 5 percent SiO_2, $33 per ton; No. 2 lump, $33 per ton.

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

GARNET (Abrasive)

During 1941 the property that shipped abrasive garnets from near Bishop, Inyo County, was shut down. In 1938 and 1939 there were shipments of garnets to the extent of 223 short tons worth $3,375. This was the first commercial production reported in California. The annual figures are concealed under the 'Unapportioned' item so as not to reveal the output of the operator.

Most garnets are utilized on paper and cloth used for woodworking and shoe manufacture and in sand blasting.

Massive deposits of garnet have been noted in several places in California but little has been done to commercialize them owing to the lack of a market. Recently garnet tailings from some of the tungsten mines have been utilized in airplane factories.

GEMS

Bibliography: State Mineralogist Reports II, XIV, XV, XVII, XVIII, XX, XXI-XXVIII (inc.), XXX-XXXII (inc.), XXXIV-XXXV. Bulletins 37, 67, 91. U. S. G. S., 'Mineral Resources of the U. S.'; Bull. 603, p. 208. Bull. Dept. Geo. Univ. of Cal., Vol. 5, pp. 149-153, 331-380. Am. Jour. Sci., Vol. 31, p. 31.

The production of gem materials in California has been somewhat irregular and uncertain since 1911. The compilation of complete statistics is difficult owing to widely-scattered places at which stones are gathered and marketed, for the most part in a small way. The gem material reported mined and sold during 1942 in California has a total value of $570. This came from Imperial, Modoc, San Bernardino, and Siskiyou counties and consisted of jasper, moss agate, californite, and iceland spar. The 1942 production showed a decreased value as compared with that of 1941, which was worth $870.

Varieties of California's Gem Stones

Diamonds have been found in a number of localities in California; but in every case, they have been obtained in stream gravels while working them for gold. The principal districts have been: Volcano in Amador County; Placerville, Smith's Flat and others in El Dorado County; French Corral, Nevada County; Cherokee Flat, Morris Ravine, and Yankee Hill, Butte County; Gopher Hill and upper Spanish Creek, Plumas County. The most productive district of recent years has been Cherokee in Butte County.

California *tourmalines* are decidedly distinctive in coloring and 'fire' as compared to foreign stones of this classification. The colors range from deep ruby to pink, and various shades of green, also blue.

One of our California gem stones, *benitoite,* has not been found elsewhere; and in but a single locality here: The Dallas Mine in San Benito County.

Kunzite, a gem variety of spodumene, was first found in the Pala district in San Diego County. It has thus far been found in only one locality (Madagascar) outside of California. It is of a lilac color, and is described in detail in Bulletin 37 of the State Mining Bureau.

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Beryls of excellent fire and delicate colors are also obtained in the Pala district, of which the *aquamarine* (blue) and *morganite* (pink) varieties deserve special mention. Morganite, like kunzite, has thus far been found elsewhere only in Madagascar.

Californite, or 'California jade,' is a gem variety of *idorase* (*vesuvianite*), and is green or white in color. It is found in Butte, Fresno, and Siskiyou counties.

Stones of precious blue *topaz* of fine quality are being cut from crystals mined in northern San Diego County. They are associated with beryl and blue tourmaline.

Some *rhodonite* has been mined in Siskiyou County, and used for decorative purposes, its value being included in the marble figures.

Garnets are found in a number of localities in California; the important yield of gems being *hyacinth* and *spessartite* varieties from San Deigo County.

Chrysoprase has been produced in Tulare County.

Turquoise has been found in the desert section of San Bernardino County, but none produced commercially in recent years.

Sapphires have been reported found in San Bernardino and Riverside counties, but not as yet confirmed. A few have been found in stream gravels with diamonds in Butte County.

Rubies have been identified by the laboratory of the State Mining Bureau, occuring in limestone from the Baldy Mountains, San Bernardino County. Thus far no stones of commercial size have been taken out.

Total Production of Gem Materials in California

The value of the gem output in California annually since the beginning of commercial production is as follows:

Year	Value	Year	Value
1900	$20,500	1923	$13,220
1901	40,000	1924	4,800
1902	162,100	1925	10,663
1903	110,500	1926	9,049
1904	136,000	1927	7,035
1905	148,500	1928	22,200
1906	497,090	1929	26,850
1907	232,642	1930	3,540
1908	208,950	1931	5,607
1909	193,700	1932	4,961
1910	237,475	1933	690
1911	51,824	1934	2,456
1912	23,050	1935	945
1913	13,740	1936	2,878
1914	3,970	1937	2,075
1915	3,565	1938	4,575
1916	4,752	1939	2,500
1917	3,049	1940	3,176
1918	650	1941	870
1919	5,425	1942	570
1920	36,056		
1921	10,954	Total value	$2,274,364
1922	1,312		

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

GRAPHITE

Bibliography: State Mineralogist Reports XVIII, XIV, XV, XVII, XXVI (inc.), XXX, XXXIII, XXXV. Bulletins 67, 91. U. S. G. S., Min. Res. 1914, Pt. II.

Graphite (also called plumbago) has been produced from time to time in the State, coming principally from Sonoma and Los Angeles counties.

Occurrences of graphite have been reported at various times from Calaveras, Fresno, Imperial, Inyo, Los Angeles, Mendocino, San Bernardino, San Diego, Siskiyou, Sonoma and Tuolumne counties. From 1931 to 1933 there was a small production of graphite from a property in Los Angeles County.

During 1942 no production of graphite was reported in California. In 1935 there was a small output of graphite coming from a single property in Los Angeles County. This material was used for experimental purposes. The annual details are concealed under the 'Unapportioned' item in order not to reveal the output of the single operator.

The principal value of graphite is on account of its infusibility and resistance to the action of molten metals. It is also largely used in the manufacture of electrical appliances, of 'lead' pencils, as a lubricant, as stove polish, paints and in many other ways. Amorphous graphite, commonly carrying many impurities, brings a much lower price. For some purposes, such as foundry facings, etc., the low-grade material is satisfactory. Among the interesting uses for graphite is the prevention of formation of scale in boilers. The action is a mechanical one. Being soft and slippery, the graphite prevents the particles of scale from adhering to one another or to the boiler and they are thus easily removed.

Graphite Production of California, by Years

According to the records of the State Mining Bureau, the graphite production of California, by years, has been as follows:

Year	Pounds	Value	Year	Pounds	Value
1901	128,000	$4,480	1923		
1902	84,000	1,680	1925		
1903			1926	*76,000	$13,120
1913	2,500	25	1927		
1914			1928		
1915			1931		
1916	29,190	2,335	1932	*156,000	1,950
1917			1933		
1918			1934		
1919	*770,000	37,225	1935	*	*
1920			1936		
1921					
1922	*624,000	26,160	Totals	1,869,690	$86,975

* Annual details concealed under 'Unapportioned,' on account of a single producer.

GYPSUM

Bibliography: State Mineralogist Reports XIV, XV, XVII, XVIII, XXII, XXIII, XXV-XXVIII (inc.), XXX, XXXI, XXX-XXXVI (inc.). Bulletins 38, 67, 91. U. S. Geol. Surv., Bull. 223, 413, 430, 697. U. S. Bur. of Standards, Circular No. 281.

Shipments of gypsum from California during 1942 amounted to a total of 425,268 net tons, valued at $791,892, and came from five prop-

Generated on 2024-09-24 16:07 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

erties in Kern County and one each in Fresno, Imperial, Monterey, Riverside, and Ventura counties. In addition to the above figures a considerable amount of gypsum came from Alameda County, which was obtained in a chemical process for reducing magnesium salts from saltworks bittern water with lime, the amount of which was not included in the above figures as it was used with limestone and magnesite. The 1941 output was the largest annual yield both in amount and value and amounted to 432,784 short tons, worth $854,184.

Uses

The most important use of gypsum from the quantity standpoint is in the calcined form where it is utilized in the manufacture of various hard-wall plasters and plaster board. As plaster of paris, it plays a very important part in surgical work. Approximately 2%, by weight, raw gypsum is added in the manufacture of Portland cement just before the final grinding. In this application, the gypsum acts as a retarder to the set of the cement. The use of gypsum tile for nonbearing fireproof partitions, stairway and elevator enclosures, and the protection of steel columns, girders and beams, has increased greatly.

Keene's cement is a gypsum product, calcined to complete dehydration, and an accelerator added such as alum, potassium sulphate, borax, aluminum sulphate.

Land plaster may be applied to the soil by drilling, or scattered in the hill, or it may be sowed broadcast, in quantities ranging from 200 to 500 pounds to the acre.

Total Production of Gypsum in California

Production of gypsum annually in California since such records have been compiled by this Bureau is as follows:

Year	Tons	Value	Year	Tons	Value
1887	2,700	$27,000	1916	33,384	$59,533
1888	2,500	25,000	1917	30,825	56,840
1889	3,000	30,000	1918	19,695	37,176
1890	3,000	30,000	1919	19,813	50,579
1891	2,000	20,000	1920	20,507	92,535
1892	2,000	20,000	1921	37,412	78,875
1893	1,620	14,280	1922	47,084	188,336
1894	2,446	24,584	1923	86,410	289,136
1895	5,158	51,014	1924	25,569	53,210
1896	1,310	12,580	1925	107,613	172,444
1897	2,200	19,250	1926	114,868	211,337
1898	3,100	23,600	1927	94,630	292,090
1899	3,663	14,950	1928	104,790	200,567
1900	2,522	10,088	1929	140,844	396,951
1901	3,875	38,750	1930	116,865	243,507
1902	10,200	53,500	1931	88,354	199,198
1903	6,914	46,441	1932	46,867	93,818
1904	8,350	56,592	1933	59,235	120,451
1905	12,859	54,500	1934	58,149	113,606
1906	21,000	69,000	1935	70,833	151,807
1907	8,900	57,700	1936	143,549	282,703
1908	34,600	155,400	1937	186,160	384,431
1909	30,700	138,176	1938	161,996	327,821
1910	45,294	129,152	1939	219,672	437,343
1911	31,457	101,475	1940	314,843	599,944
1912	37,529	117,388	1941	432,784	854,184
1913	47,100	135,050	1942	425,268	791,892
1914	29,734	78,375			
1915	20,200	48,953	Totals	$3,594,939	$8,383,112

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

LIMESTONE

Bibliography: State Mineralogist Reports IV, XII-XV (inc.), XVII-XXXI (inc.), XXXIII-XXXV (inc.), XXXVII. Bulletins 38, 91. Oregon Agr. College Extension Bulletin 305. Eng. and Min. Jour.-Press, Vol. 120, pp. 249-253.

'Industrial' limestone was shipped from 22 properties in 12 counties in California during 1942 and totaled 474,764 tons valued at $1,155,352. The above came from six properties in San Bernardino County; three in El Dorado County; two each in Santa Clara, Santa Cruz, and Tuolumne counties; and one each in Alameda, Inyo, Los Angeles, Riverside, San Luis Obispo, San Mateo, and Ventura counties. The 1941 output came from 19 properties in 10 counties and was 459,153 tons worth $801,868. Distribution of the 1942 output by counties was as follows:

County	*Amount*	*Value*
El Dorado	147,469	$247,522
San Bernardino	57,678	148,530
Alameda, Inyo, Los Angeles, Riverside, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Tuolumne, and Ventura *	269,617	759,300
Totals	474,764	$1,155,352

* Combined to conceal output of individual operators in each.

In the above figures for 1942 are approximately 197,096 tons of limestone used in making 98,548 net tons of burnt lime which was valued at $961,803. This lime was burnt at two properties each in El Dorado and San Bernardino counties and one each in Alameda, Santa Cruz, and Tuolumne counties. Also included in the 'industrial' limestone for 1942 total is 57,086 tons valued at $309,936 which was used for agricultural purposes, and in stock feed and poultry grits.

The amount here does not include the limestone used in the manufacture of cement nor for macadam and concrete, but accounts for that utilized as smelter and foundry flux, for glass and sugar making, and other special chemical and manufacturing processes. It also includes that utilized for fertilizers (agricultural 'lime'), 'roofing gravel,' paint and concrete filler, whiting for paint, putty, kalsomine, terrazzo, paving dust, chicken grit, carbon dioxide gas, 'paving compound,' facing dust for concrete pipe, also for rubber and magnesite mix. The material from Alameda, San Mateo, and Santa Clara counties was shells, dredged from San Francisco Bay, which were ground and used for agricultural purposes and poultry grit.

Limestone Production of California, by Years

The following tabulation gives the amounts and values of 'industrial' limestone produced in California by years since 1894 when compilation of such records was begun by the State Mining Bureau. These tonnages consist principally of limestone utilized for flux, glass and sugar making, agricultural, chemical, and other special industrial purposes. That utilized in cement manufacture is not included: Beginning with 1942 the limestone used in the manufacture of burnt lime was included with these figures, instead of being kept separate as a structural material, as most of the lime is being used in metallurgical and chemical industry, and not in construction as in previous years.

Generated on 2024-09-24 16:03 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Year	Tons	Value	Year	Tons	Value
1894	15,420	$19,275	1920	90,120	$298,197
1895	71,355	71,690	1921	75,921	305,912
1896	68,184	71,112	1922	84,382	282,181
1897	36,796	38,556	1923	143,266	348,464
1898	27,686	24,548	1924	219,476	582,660
1899	30,769	29,185	1925	319,977	494,525
1900	32,791	31,532	1926	108,795	367,501
1901	76,937	99,445	1927	699,790	663,957
1902	71,422	90,524	1928	127,895	397,935
1903	125,919	163,988	1929	168,315	557,617
1904	40,207	87,207	1930	169,477	508,751
1905	192,749	323,325	1931	177,268	560,699
1906	80,262	162,827	1932	168,950	487,788
1907	230,985	406,041	1933	207,371	487,712
1908	273,890	297,264	1934	198,057	461,139
1909	337,676	419,921	1935	227,214	496,054
1910	684,635	581,208	1936	295,792	661,757
1911	516,398	452,790	1937	351,755	830,562
1912	613,375	570,248	1938	302,665	729,149
1913	301,918	274,455	1939	316,029	838,235
1914	572,272	517,713	1940	563,999	895,832
1915	146,324	156,288	1941	459,153	801,868
1916	187,521	217,733	1942	474,764	1,155,352
1917	237,279	356,396			
1918	208,566	456,258	Totals	11,219,048	$19,380,521
1919	88,291	248,145			

LITHIA

Bibliography: State Mineralogist Reports II, IV, XIV, XXI, XXX, XXXV. Bulletins 38, 67, 91.

During 1942 lithium salts were again produced in California; but coming from a single property, the figures are concealed under the 'Unapportioned' item. Starting with 1938, material came from the brines of Searles Lake in San Bernardino County at the plant of the American Potash and Chemical Corporation, in the form of sodium-lithium phosphate, and was the first output of this kind, previous production being the mineral lepidolite.

Lithia mica, lepidolite (a silicate of lithium and others), utilized in the manufacture of artificial mineral water, fireworks, glass, etc., has been mined in San Diego County since 1899, except between 1905 and 1915, though there was none shipped in 1923, 1925, 1929-1937 (inc.). During 1930 there was a small amount of lepidolite mined in California, but none shipped. Some amblygonite, a lithium phosphate, is occasionally also obtained from pockets associated with the gem tourmalines.

Lithia minerals total production in the State has been as follows:

Year	Tons	Value	Year	Tons	Value
1899	124	$4,600	1923		
1900	440	11,000	1924	109	$2,269
1901	1,100	27,500	1925		
1902	822	31,880	1926 / 1927 / 1928	*550	13,900
1903	700	27,300			
1904	641	25,000	1929		
1905	25	276	1938 / 1939 *	378	100,338
1906					
1915	91	1,365	1940 / 1941 *	366	84,099
1916	71	1,065			
1917	880	8,800	1942	*	*
1918	4,111	73,998			
1919	800	14,400			
1920	10,046	153,502	Totals	22,619	$602,073
1921 / 1922	*1,365	20,781			

* Annual details concealed under 'Unapportioned.'

Generated on 2024-09-24 16:03 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

MICA

Bibliography: State Mineralogist Reports II, IV, XXVI-XXVIII (inc.), XXX, XXXIII-XXXVI (inc.). Bulletins 38, 67, 91. U. S. Geol. Surv., Bull. 740; Min. Res. of U. S. Eng. & Min. Jour.-Press, Vol. 115, pp. 55-60, Jan. 13, 1923.

Sericite, a fine-grained variety of Muscovite, has been produced continuously since 1929 in California with the exception of 1934, 1939, and 1942. The 1941 output came from a single property each in Imperial, Inyo, and Mariposa counties. The annual details are concealed in the 'Unapportioned' items so as not to reveal production of the individual operators. The material mined during the year was sericite. Sericite is used as a cheap grade of ground mica for roofing, as a refractory, foundry facing, and decorative material to imitate snow. A small amount of vermiculite, a hydrous mica, expanded by heating and then used as an insulating agent, was mined in 1936.

Classification and Uses

Practically all marketable mica is of the muscovite or phlogopite varieties. There are three main commercial classes: Sheet mica, including punch; splittings, and scrap. Sheet mica is used chiefly for electrical purposes and for glazing; splittings are made into built-up mica; scrap is ground to a powder. Mica to be classified as sheet must yield a rectangle of at least 1½ x 2 in., must split evenly and freely, be free from cracks, rulings, or plications, and reasonably free from inclusions of foreign matter, though stains of a nonconducting character are permissible for some uses. Ability to withstand heat and high electrical resistance have led to a wide application of sheet mica in the electrical industries. The electrical uses of sheet mica greatly exceed all others in quantity and value of the material used.

As a heat-resisting transparent medium, sheet mica has various uses. It is widely employed for stove windows, though this use has declined to a considerable extent. A hard and rigid mica that is nearly clear is best suited for stove fronts. High-grade stove mica commands a higher price than electrical mica, because for the most part larger sizes are demanded. Mica is also used in furnace and bake-oven sight-holes, heat screens, lamp chimneys, canopies and shades, particularly for gas mantels, and also for military lanterns and in lantern slides.

Its ability to withstand shocks and strains, combined with its transparency, has led to wide use in spectacles, drivers' helmets, smoke helmets, compass cards, gage fronts, and in windows subject to shock, as in the conning towers of warships. On account of its heat-resisting qualities, ground mica is used in railroad car axle packings, foundry facing in pipe and boiler coverings, in fireproof paints, and in rubber tires. Ground mica is used as a component in roofing, as a filler in rubber and other products, in foundry facing, calico printing and as a tire powder. It is used also in tinsel decorations, and as 'Santa Claus snow' for Christmas tree and window decorations. It is used as a lubricant for wooden bearings, and mixed with oil for metal bearings.

The vermiculite variety is any of several hydrous mica minerals which expand upon heating. In recent years they have become valuable as an insulating agent for both heat and sound, when being expanded it often takes on a gold or silver color and is used in window decoration.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Production of mica in California has been as follows:

Year	Tons	Value	Year	Tons	Value
1902	50	$2,500	1937*	4,969	$31,751
1903	50	3,800	1938*		
1904	50	3,000	1939		
1929			1940*	1,469	11,050
1930*	2,240	15,260	1941*		
1931			1942		
1932			Totals	14,618	$96,974
1933*	1,957	13,963			
1934					
1935					
1936*	3,833	15,650			

* Annual details concealed under 'Unapportioned.'

MINERAL PAINT

Bbliography: State Mineralogist Reports XII-XIX (inc.), XXI, XXII-XXVIII (inc.), XXXV, XXXVII. Bulletins 38, 91.

During 1942 two properties in California shipped mineral paint, one each in San Bernardino and Stanislaus counties. The 1941-1942 total output was 145 short tons valued at $1,458. The annual details are concealed under the 'Unapportioned' item so as not to reveal the output of individual producer. This was the first shipment of mineral paint since 1937, when a small amount came from a single property each in Nevada, Placer, and Yuba counties. The material from Nevada and Yuba counties was a limonite and that from Placer County a sienna.

These materials have come from Alameda, Amador, Butte, Calaveras, Colusa, Los Angeles, Napa, Nevada, Placer, Riverside, Shasta, Sonoma, Stanislaus and Ventura counties. There are also other deposits that may have possible commercial value, but as yet there have been no commercial shipments from El Dorado, Imperial, Kern, Kings, Lake, Mendocino, San Diego, Siskiyou, Trinity, and Yuba counties, in which they are found.

Mineral Paint Production of California, by Years

The first recorded production of mineral paint materials in the State was in the year 1890. The output, showing annual amount and value since that time, is given herewith:

Year	Tons	Value	Year	Tons	Value
1890	40	$480	1916	643	$3,960
1891	22	880	1917	520	2,700
1892	25	750	1918	728	4,738
1893	590	26,795	1919	1,780	17,055
1894	610	14,140	1920	779	8,477
1895	750	8,425	1921	446	4,748
1896	395	5,540	1922	1,620	13,277
1897	578	8,165	1923	1,049	11,773
1898	653	9,698	1924	532	5,234
1899	1,704	20,294	1925	669	6,969
1900	529	3,993	1926	569	5,846
1901	325	875	1927*	919	9,592
1902	589	1,533	1928*		
1903	2,370	3,720	1929	467	2,820
1904	270	1,985	1930*	250	3,000
1905	754	4,025	1931*		
1906	250	1,720	1932		
1907	250	1,720	1933		
1908	335	2,250	1935*	570	5,550
1909	305	2,325	1936		
1910	200	2,040	1937	855	5,193
1911	186	1,184	1938		
1912	300	1,800	1941*	145	1,458
1913	303	1,780	1942*		
1914	132	847			
1915	311	1,756	Totals	21,717	$234,299

* Annual details concealed under 'Unapportioned.'

Generated on 2024-09-24 15:59 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

MINERAL WATER

Bibliography: State Mineralogist Reports VI, XII-XVIII (inc.), XXI-XXIX (inc.), XXXI, XXXIII (inc.), XXXV-XXXVII (inc.), U. S. G. S. Water Supply Paper 338. Min. Res., 1914, 1916. 'Mineral Springs and Health Resorts of California,' by Dr. Winslow Anderson, 1890. U. S. Dept. of Agr., Bur. of Chem., Bulletin 91.

A widespread production of mineral water is shown annually in California. These figures refer to mineral water actually bottled for sale, or for local consumption. Water from some of the springs having a special medicinal value brings a price many times higher than the average shown, while in some cases the water is used merely for drinking purposes and sells for a nominal figure. Health and pleasure resorts are located at many of the springs. The waters of some of the hot springs are not suitable for drinking, but are very efficacious for bathing. From a therapeutic standpoint, California is particularly rich in mineral springs.

The commercial output of mineral water in California during 1942 amounted to 17,559,686 gallons valued at $567,897, as compared with 17,746,256 gallons worth $988,520 in 1941. The 1942 output came from springs and wells on 36 properties in 16 counties, and was distributed as follows:

County	*Gallons*	*Value*
Lake	9,100	$1,800
Los Angeles	8,281,287	283,745
Napa	41,312	4,890
Sonoma	80,697	16,603
Butte, Colusa, Contra Costa, Marin, Orange, Placer, Riverside, San Bernardino, San Diego, San Luis Obispo, Shasta, Siskiyou *	9,147,290	260,859
Totals	17,559,686	$567,897

* Combined to conceal the output of producers in each.

The production above tabulated came either from springs or artesian wells and was bottled, in part with artificial carbonation, but mostly natural, and sold for drinking purposes. A large part was used in the preparation of soft drinks with flavors.

Mineral Water Production of California, by Years

Mineral water was bottled for sale, at the Napa Soda Springs, Napa County, as early as 1856,[1] and at other springs in California, notably The Geysers, Sonoma County, also at early dates; but there are no figures

[1] Cronise, T. F., The natural wealth of California, p. 182. 1868.

Generated on 2024-09-24 16:05 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

available earlier than the year 1887. Amounts and values, annually, since that year are shown herewith:

Year	Gallons	Value	Year	Gallons	Value
1887	618,162	$144,368	1916	2,273,817	$410,112
1888	1,112,202	252,990	1917	1,942,020	340,566
1889	808,625	252,241	1918	1,808,791	375,650
1890	258,722	89,786	1919	2,233,842	340,117
1891	334,553	139,959	1920	2,391,791	421,643
1892	331,875	162,019	1921	3,446,278	367,476
1893	383,179	90,667	1922	4,276,346	486,424
1894	402,275	184,481	1923	5,487,276	616,919
1895	701,397	291,500	1924	8,159,211	818,726
1896	808,843	337,434	1925	12,115,072	1,230,455
1897	1,508,192	345,863	1926	14,074,877	1,171,550
1898	1,429,809	213,817	1927	16,644,423	1,487,183
1899	1,338,537	406,691	1928	25,049,002	1,304,969
1900	2,456,115	268,607	1929	27,032,083	2,040,615
1901	1,555,328	559,057	1930	37,354,111	2,870,663
1902	1,701,142	612,477	1931	26,164,331	1,347,860
1903	2,056,340	558,201	1932	19,031,224	1,495,988
1904	2,430,320	496,946	1933	15,650,406	719,746
1905	2,194,150	538,700	1934	19,882,436	1,071,197
1906	1,585,690	478,186	1935	16,659,254	940,333
1907	2,924,269	544,016	1936	19,348,513	777,899
1908	2,789,715	560,507	1937	18,309,729	1,130,810
1909	2,449,834	465,488	1938	26,900,959	853,998
1910	2,335,259	522,009	1939	16,678,741	735,988
1911	2,637,669	590,654	1940	16,190,549	960,701
1912	2,497,794	529,384	1941	17,746,256	988,520
1913	2,350,792	599,748	1942	17,559,686	567,897
1914	2,443,572	476,169			
1915	2,274,267	467,738	Totals	541,129,651	$37,143,707

PHOSPHATES

Bibliography: State Mineralogist Report XXI. Bulletins 67, 91.

No commercial production of phosphates has been recorded from California, though occasional pockets of the lithium phosphate, amblygonite, Li (AlF) PO_4, have been found associated with the gem tourmaline deposits in San Diego County. Such production has been classified under lithia. In 1938, recovery began on a commercial scale of sodium-lithium phosphate at the plant of the American Potash and Chemical Corporation, at Searles Lake, San Bernardino County. However, the product is sold for its lithium content rather than the phosphate, hence we record it under Lithia.

PUMICE and VOLCANIC ASH

Bibliography: State Mineralogist Reports XII, XIV, XV, XVII, XVIII, XXII-XXV (inc.), XXX-XXXII (inc.), XXXIV-XXXVIII (inc.). Bulletin 38. U. S. Bureau of Mines, I. G. 6560. (See 'Tufa.')

The output of pumice and volcanic ash in California during 1942 totaled 55,603 short tons, valued at $209,539 f.o.b. rail shipping point. This material came from three properties each in Inyo and Siskiyou counties, two each in Kern, Madera, and Mono counties; and one each in Modoc, Napa, and San Luis Obispo counties. The 1942 production showed a decrease in both amount and value at compared with that of 1941, which was 85,309 tons, worth $283,663 and the largest annual output reported in this State.

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The material in 1942 from Inyo, Modoc, Mono, Napa, and Siskiyou counties was 45,648 tons of lump pumice, worth $136,488, which was used for light-weight aggregate in concrete, acoustic plaster, abrasives, scouring bricks, insulating, and hen-house litter; while that from Kern, Madera, and San Luis Obispo counties was 9,955 tons of volcanic ash or tuff variety, worth $73,051, and was employed in making soap, cleanser compounds, as a filler in concrete, in asphalt, and as a carrier for insecticides in dry agricultural sprays. A portion of the Kern County ash is going into the preparation of one of the nationally advertised brands of cleanser compounds.

Pumice Production of California, by Years

Commercial production of pumice in California was first reported to the State Mining Bureau in 1909, then not again until 1912, since which year there has been a small annual output, as indicated by the following table:

Year	Tons	Value	Year	Tons	Value
1909	50	$500	1927	13,779	$168,896
1910	----------	----------	1928	10,440	105,055
1911	----------	----------	1929	10,449	76,123
1912	100	2,500	1930	12,947	128,847
1913	3,590	4,500	1931	11,711	108,130
1914	50	1,000	1932	9,891	86,034
1915	380	6,400	1933	8,243	61,067
1916	1,246	18,092	1934	9,951	54,748
1917	525	5,295	1935	14,890	87,055
1918	2,114	28,669	1936	17,132	143,709
1919	2,388	43,657	1937	10,392	79,005
1920	1,537	25,890	1938	18,783	105,207
1921	406	6,310	1939	41,109	159,951
1922	613	4.248	1940	35,162	126,516
1923	2,936	16,309	1941	85,309	283,663
1924	4,919	33,404	1942	55,603	209,539
1925	5,319	32,937			
1926	7,170	48,350	Totals	389,134	$2,261,606

PYRITES

Bibliography: State Mineralogist Reports XVIII, XIX, XXII, XXV, XXVI, XXX, XXXV. Bulletins 38, 91. Min. and Sci. Press, Vol. 144, pp. 825, 840.

Pyrite, shipped in California during 1942, came from a single property in Shasta County and showed an increase in both quantity and value over that of 1941. The annual details are placed under 'Unapportioned' to conceal the output of the individual operator.

This material was mostly used in the manufacture of sulphuric acid for explosives and fertilizer. Some iron sulphate had been produced previously and was utilized directly in the preparation of an agricultural fertilizer and insecticide. The sulphur content ranged up to 50.8% S.

This does not include the large quantities of pyrite, chalcopyrite, and other sulphides which are otherwise treated for their valuable metal contents. Some sulphuric acid is annually made as a by-product in the course of roasting certain tonnages of Mother Lode auriferous concentrates while under treatment for their precious metal values.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Pyrites Production in California, by Years

The total recorded pyrites production in California to date is as follows:

Year	Tons	Value	Year	Tons	Value
1898	6,000	$30,000	1922	151,381	$570,425
1899	5,400	28,620	1923	148,004	555,308
1900	3,642	21,133	1924	124,214	517,835
1901	4,578	18,429	1925	129,500	528,550
1902	17,525	60,306	1926	100,896	466,088
1903	24,311	94,000	1927	130,910	564,823
1904	15,043	62,992	1928	90,566	400,627
1905	15,503	63,958	1929	79,169	363,717
1906	46,689	145,895	1930	39,958	194,228
1907	82,270	251,774	1931	25,402	131,174
1908	107,081	610,335	1932		
1909	457,867	1,389,802	1933	* 72,271	297,832
1910	42,621	179,862	1934		
1911	54,225	182,954	1935	* 157,129	547,754
1912	69,872	203,470	1936		
1913	79,000	218,537	1937	* 155,107	541,915
1914	79,267	230,058	1938		
1915	92,462	293,148	1939	* 127,604	452,901
1916	120,525	372,969	1940	* 167,711	598,870
1917	111,325	323,704	1941		
1918	128,329	425,012	1942	*	*
1919	147,024	540,300			
1920	146,001	530,581	Totals	3,665,407	$13,483,621
1921	110,025	473,735			

* Annual details concealed under 'Unapportioned.'

SHALE OIL

Bibliography: State Mineralogist Report XIX. U. S. Geol. Surv., Bulletins 322, 729. U. S. Bur. of Mines, Bull. 210, Eng. and Min. Jour.-Press, Vol. 118, No. 8, pp. 290-292, Aug. 23, 1924. Chem. & Met. Eng., Vol. 32, No. 6, Feb. 1925. Min. Congress Jour., Dec. 1924.

Two plants on a more or less experimental scale operated for six years in California, with commercial production beginning in a small way in 1922. The product, in part, was sold for utilization as a flotation oil in metallurgical work, and part consumed as fuel at the plants. There has been no production reported since 1927.

Shale Oil Production of California, by Years

Year	Barrels	Value
1922	* 4,333	$44,262
1923		
1924	* 8,688	55,240
1925		
1926	* 8,819	9,998
1927		
1928		
Totals	21,840	$109,500

* Annual details concealed under 'Unapportioned.'

SILICA (Sand and Quartz)

Bibliography: State Mineralogist Reports IX, XIV, XV, XVII, XVIII, XX-XXVIII (inc.), XXXI-XXXIII (inc.), XXXV-XXXVIII (inc.). Bulletins 38, 67, 91.

The 1942 output of silica (quartz and glass sand) in California amounted to a total of 193,174 net tons, valued at $692,762 f.o.b. rail

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

shipping point, and came from three properties in San Bernardino County; two in Contra Costa County; and one each in Kern, Mariposa, Orange, Riverside, and San Diego counties. The above consisted of 102,015 tons of glass sand, worth $432,341, and 91,159 tons of boulder quartz, worth $260,421, and was the largest output in amount and value ever recorded in this State. The 1941 production consisted of 107,679 tons of glass sand and 29,981 tons of boulder quartz or a total of 137,660 tons, worth $514,266.

We combine these materials because of the overlapping roles of vein quartz which is mined for use in glass-making and as an abrasive, and that of silica sand which, although mainly utilized in glass manufacture, also serves as an abrasive. Both varieties are also utilized to some extent in fire-brick manufacture.

We do not include under this heading such forms of silica as quartzite, sandstone, flint, tripoli, diatomaceous earth, nor the gem forms of 'rock crystal,' amethyst, and opal. Each of these has various industrial uses, which are treated under their own designations.

The glass sand came from Contra Costa, Orange and Riverside counties. For making the higher grades of glass, deposits in Contra Costa County have replaced the sand imported from Belgium. Belgium sand has displaced local material in the manufacture of sodium silicate ('water glass'). There are various deposits of quartz in California which could be utilized for glass making, but to date they have not been so used owing to the cost of grinding and the difficulty of preventing contamination by iron while grinding.

Silica sand has been produced in the following counties of the State: Alameda, Amador, Contra Costa, El Dorado, Imperial, Inyo, Los Angeles, Mariposa, Mono, Monterey, Orange, Placer, Riverside, San Diego, San Joaquin and Tulare, the chief centers being Contra Costa, Amador, Monterey and Los Angeles counties. The industry is of limited importance, so far, because of the fact that much of the available material is not of a grade which will produce first-class colorless glass; for such, it must be essentially iron-free. Even a fractional percent of iron imparts a green color to the glass.

The Tariff Act of June 21, 1930, placed a duty on sand, containing 95 per cent or more of *Silica* and not more than six-tenths of 1 per cent of oxide of iron and suitable for use in the manufacture of glass, of $2 per ton.

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Total Silica Production in California

Total silica production in California since the inception of the industry, in 1899, is shown below, being mainly sand:

Year	Tons	Value	Year	Tons	Value
1899	3,000	$3,500	1922	9,874	$31,016
1900	2,200	2,200	1923	7,964	30,420
1901	5,000	16,250	1924	6,808	35,006
1902	4,500	12,225	1925	12,498	96,780
1903	7,725	7,525	1926	30,010	104,317
1904	10,004	12,276	1927	24,636	94,762
1905	9,257	8,121	1928	14,814	66,679
1906	9,750	13,375	1929	18,686	79,210
1907	11,065	8,178	1930	17,802	71,380
1908	9,255	22,045	1931	43,330	182,769
1909	12,259	25,517	1932	33,997	136,324
1910	19,224	18,265	1933	70,329	266,520
1911	8,620	8,672	1934	70,432	296,643
1912	13,075	15,404	1935	70,835	297,272
1913	18,618	21,899	1936	77,830	310,278
1914	28,538	22,688	1937	84,313	348,987
1915	28,904	34,322	1938	63,167	278,676
1916	20,880	48,908	1939	86,229	349,074
1917	19,376	41,166	1940	101,041	376,723
1918	23,257	88,930	1941	137,660	514,266
1919	18,659	101,600	1942	193,174	692,762
1920	25,324	96,793			
1921	10,569	49,179	Totals	1,494,478	$5,327,902

SILLIMANITE-ANDALUSITE-KYANITE GROUP

Bibliography: State Mineralogist Reports XX, XXIII, XXIV, XXVII, XXXV-XXXVIII (inc.). Bulletins 67, 91. Dana's Mineralogy. U. S. Geol. Surv., Prof. Paper 110. U. S. Bureau of Mines, Inform. Circ. 6255. Eng. & Min. Jour.-Press. Vol. 120, pp. 91-94, 1925. Amer. Mineralogist, June, 1924.

During 1942 in California shipments of andalusite from Mono County and kyanite from Imperial County were made, the annual details are concealed under 'Unapportioned' item so as not to reveal the output of either operator.

Sillimanite and andalusite are both aluminum silicates (Al_2SiO_5), having the same composition and formula, but with slightly different physical characteristics. Though both crystallize in the orthorhombric system, their crystal habits are different. A massive deposit of andalusite, found in Dry Creek Canyon in the White Mountains of the Inyo Range, in Mono County, is being mined by the Champion Spark Plug Company of Detroit, Michigan. The material is shipped East and utilized in the manufacture of porcelain for automobile spark plugs, for other high-tension electric insulators, laboratory ware and porcelain. Porcelain made from these minerals can be subjected to sudden and extreme changes in temperature without damage.

Kyanite is also an aluminum silicate (Al_2SiO_5), of the same chemical composition as andalusite and sillimanite, but crystallizing in the triclinic system. A deposit of kyanite is being mined in Imperial County, near Ogilby, by the Vitrefrax Corparation and shipments made to their refractory plant in Los Angeles.

Dumortierite, though differing somewhat in composition from the above, being a basic aluminum silicate ($HAl_8BSi_3O_{20}$), has proved similar in behavior in ceramic work so that it is now being mixed with andalusite for electrical porcelains. A deposit of this mineral in

Generated on 2024-09-24 16:05 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Nevada is being mined for that purpose. Occurrences of massive dumortierite are known in Imperial and San Diego counties in this State and there may yet be some commercial possibilities for them.

Total Sillimanite Group Production of California, by Years

Year	Tons	Value	Year	Tons	Value
1922			1933		
1923*	4,584	$98,790	1934*	3,035	$69,026
1924			1935		
1925			1936*	3,112	89,214
1926*	4,810	203,000	1937		
1927			1938*	2,681	70,477
1928*	4,276	76,000	1940		
1929			1941*	1,344	23,391
1930*	4,359	198,893	1942	*	*
1931					
1932*	1,244	21,800	Totals	29,445	$850,591

* Annual details concealed under 'Unapportioned.'

SOAPSTONE and TALC

Bibliography: State Mineralogist Reports XII, XIV, XV, XVII-XXVII (inc.), XXX, XXXIII-XXXVII (inc.). Bulletins 38, 67, 91. U. S. Bur. of Mines, Bulletin 213. Rep. of Investigations, Serial No. 2253, May, 1921.

The total production of talc and soapstone in California during 1942 amounted to 47,782 net tons, valued at $545,509, as compared with 47,935 tons, worth $525,396, in 1941. The 1942 output had the largest annual value of any year on record in this State although the 1941 output slightly passed it in amount. The 1942 output of high grade talc came from eight properties in Inyo County and three in San Bernardino County; and the soapstone from a single property in El Dorado County.

The talc was utilized mainly in toilet powder, paint, paper, for rubber manufacture, in ceramics, etc. The 'soapstone' grades were used mainly for roofing granules and as a filler in roofing paper and part also as an admix in cement.

It is reported that California talc has replaced to some extent imported talc in the toilet trade on the basis of quality. The largest production of talc in the United States comes from New York and Vermont and of massive soapstone from Georgia.

Composition and Varieties

Talc is hydrous magnesium silicate with the chemical formula $H_2Mg_3(SiO_3)_4$. It is also called soapstone and steatite. The term 'talc' properly includes all forms of the pure mineral, whereas 'steatite' denotes particularly the massive, compact variety, and 'soapstone' the impure, massive forms containing as low as 50% of talc. When pure, talc is soft, having a hardness of 1, but impurities increase the hardness up to 3 or 4. The color varies from pure white and silvery white through gray, green, apple green, to dark green, also yellow, brown, and reddish when impure. It is commonly compact or massive, or in fine granular aggregates, and often in foliated plates or in fibrous aggregates.

Uses

Although the uses of talc and soapstone are many and varied, some of them are not in general well known nor fully developed; and

Generated on 2024-09-24 16:04 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

although few of their uses can justly be considered essential in the sense that no substitute can be used, there are several which are of great importance. The widest use of talc is in the powdered form, and the value depends upon color (whiteness), uniformity, fineness of grain, freedom from grit, 'slip,' and sometimes freedom from lime. The white varieties, free from grit and iron, low in lime, ground to 200-mesh and finer, are largely used as a filler for paper, rubber and paint, and the very highest grade as toilet powder. Ground talc is also used in dressing and coating cloth, in making soap, rope, twine, pipe-covering compounds, heavy lubricants, and polishes, and as a filler in concrete to make it waterproof. Ground talc and soapstone are used in ceramic body for tile and china; for foundry facings, either alone or mixed with graphite and a coarser grade is used in the manufacture of asphalt-coated roofing felts and papers, both as a filler and as a surfacing. Massive close-grained talc, free from iron and grit, is cut into blanks and baked, forming the material used for gas tips and electrical insulation, commonly known as 'lava.' Its hardness, its resistance to heat, acid and alkalies, and its great dielectric strength make it very useful for electric insulation, and no satisfactory substitute for it has been found.

Massive varieties of talc, pyrophyllite, and high grades of soapstone are cut into slate pencils and steel-workers' crayons. 'French chalk' or 'tailor's chalk' is a soft, massive talc. In China, Japan and India, massive talc (steatite) is carved into images and other forms, and is often sold as imitation jade. Soapstone is cut into slabs of 1 and 2 inches in thickness and sold as griddles, footwarmers, and fireless-cooker stones, or fabricated into laundry sinks and tubs, laboratory table tops, hoods, tanks and sinks, electric switchboards, and for other uses in which the properties of resistance to heat, acids and alkalies, and electricity are essential.

Talc Production of California, by Years

Production was intermittent in the State up to 1912; but there has been a material growth since 1916, as shown in the following table:

Year	Tons	Value	Year	Tons	Value
1893	400	$17,750	1919	8,764	$115,091
1894			1920	11,327	221,362
1895	25	375	1921	8,752	130,078
1896			1922	13,378	197,186
1897			1923	17,439	252,661
1898			1924	16,179	242,770
1899			1925	15,465	239,084
1900			1926	17,004	255,645
1901	10	119	1927	16,218	164,744
1902	14	288	1928	18,668	251,372
1903	219	10,124	1929	18,676	193,493
1904	228	2,315	1930	15,861	154,258
1905	300	3,000	1931	13,472	109,940
1906			1932	10,690	122,880
1907			1933	14,451	153,668
1908	3	48	1934	13,920	158,606
1909	33	280	1935	17,332	170,830
1910	740	7,260	1936	25,643	309,287
1911			1937	29,657	347,772
1912	1,750	7,350	1938	28,346	290,810
1913	1,350	6,150	1939	31,820	372,078
1914	1,000	4,500	1940	37,433	329,425
1915	1,663	14,750	1941	47,935	525,396
1916	1,703	9,831	1942	47,782	545,509
1917	5,267	45,279			
1918	11,760	85,534	Totals	522,677	$6,167,898

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

STRONTIUM

Bibliography: State Mineralogist Report XXVI, XXVII, XXXV-XXXVI, XXXVIII. Bulletins 67, 91. U. S. G. S. Bull. 540; 660-I.

During 1942 strontium minerals were mined and shipped from two properties in San Bernardino County and one in Imperial County. The annual details are concealed under the 'Unapportioned' item so as not to reveal the output of the individual. The 1941-1942 output totaled 5,671 short tons valued at $83,069. This material was reported to be used for pyrotechnics (red flares), in the refining of sugar, and in a new alloy of steel.

There was a small shipment of strontianite in 1939 from the deposit near Barstow, San Bernardino County, and this was used in a new steel alloy. The last previous production was in 1918, though in that year both celestite ($SrSO_4$), and the carbonate, strontianite ($SrCO_3$) were shipped. The first recorded commercial output of strontium minerals in California was in 1916. The occurrence of the carbonate is particularly interesting and valuable, as it appears to be the only considerable deposit of commercial importance so far opened up in the United States. Shipments reported as averaging 80% $SrCO_3$ have been made. The deposit is associated with deposits of barite near Barstow, San Bernardino County. The carbonate has also been found in massive form near Shoshone, Inyo County. In addition to Imperial County, celestite is found near Calico and Ludlow, and in the Avawatz Mountains in San Bernardino County, but as yet undeveloped.

The principal use for strontium in the United States is in the form of the nitrate in the manufacture of red flares, or Costen and Bengal lights and fireworks.

Production of strontium minerals in California, by years, has been as follows:

Year	Tons	Value	Year	Tons	Value
1916	57	$2,850	1939	2	$82
1917	3,050	37,000	1940	627	8,686
1918	2,900	33,000	1941*	5,671	83,069
1919			1942*		
			Totals	12,307	$164,687

* Annual details concealed under 'Unapportioned.'

SULPHUR

Bibliography: State Mineralogist Reports IV, XIII, XIV, XXV, XXXIV, XXXV, XXXVIII. Bulletins 38, 67, 91.

During 1942 in California there was one shipper of sulphur from a single property in Inyo County. The annual details are concealed under the 'Unapportioned' item so as not to reveal the output of an individual. The 1942 output was a decrease from that of 1941 which was 9,750 short tons worth $209,269 and was the largest annual production in this State. The 1941 output came from a single property each in Imperial and Inyo counties. This mineral has been found to some extent in Alpine, Colusa, Imperial, Inyo, Kern, Lake, Sonoma, Tehama, and Ventura counties.

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Total Production of Sulphur in California

Sulphur was produced at the famous Sulphur Bank mine in Lake County, during the years 1865-1868 (inc.); following which the property became more valuable for its quicksilver. The Elgin quicksilver mine, near Wilbur Springs, Colusa County, is a similar occurrence.

Production of sulphur in California to date:

Year	Tons	Value	Year	Tons	Value
1865 1866 1867 *	941	$53,500	1934	4,412	$67,656
1868 to 1922			1935 *	5,308	61,603
1923 1924 *	185	4,071	1936 1937 *	9,451	120,010
1925 to 1928			1938	4,811	73,741
1929 1930 1931 *	265	9,025	1939	8,803	105,619
			1940	9,750	209,296
1932 1933 *	1,991	32,838	1941	*	*
			1942		
			Totals	45,917	$737,359

* Annual details concealed under 'Unapportioned.'

ZIRCON

Bibliography: State Mineralogist Report XXXIV.

During 1942 there was no production of zircon reported in California but in 1941 there was a small shipment of zircon sand from near Lincoln, Placer County, to the East Coast to be used in a steel alloy. In 1937 for the first time, zircon was reported in commercial quantities, in this State, from the Kaufield dragline dredge near Lincoln. They recovered considerable zircon from their black sand but only shipped a small amount for experimental purposes in the manufacture of refractories and as an abrasive in blast sand.

The chief source of zirconium is the mineral zircon, a zirconium silicate, $ZrSiO_4$. Zircon is used, as a gem, being next to the diamond in brilliancy; as a refractory, molds for steel, insulation in electric heating devices, as a coating on other refractories, coating of welding rods, and in the manufacture of other zirconium compounds.

The metal zirconium is used in radio tubes as an alloy in steel, with copper, etc.

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CHAPTER SIX

SALINES

Bibliography: State Mineralogist Reports III, XIV, XV, XVII-XXIX (inc.), XXXIII-XXXVIII (inc.). Bulletin 24. Spurr and Wormser, "Marketing of Minerals." "Non-Metallic Minerals," by R. B. Ladoo. "Industrial Minerals and Rocks," A. I. M. E., 1937. See also under each substance.

Under this heading are included borax, common salt, soda, potash, and other alkaline salts. The first two have been produced in a number of localities in California, more or less regularly since the early sixties. Except for a single year's absence, soda has had a continuous production since 1894. Potash, magnesium chloride and sulphate, and calcium chloride have been added to the commercial list in recent years, joined in 1926 by bromide, and in 1931 by iodine and in 1938 by the alum minerals. The nitrates are still prospective.

Our main resources of salines are the lake beds of the desert regions of Imperial, Inyo, Kern, Los Angeles, San Bernardino, and San Luis Obispo counties, and the waters of the Pacific Ocean.

The total value of the saline group showed an increase from $11,927,533 in 1941 to $15,645,003 in 1942, with all substance included under this heading showing an increased output with the exception of magnesium salts.

The following table gives details for each year:

Substance	1941		1942		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Borates	224,986 tons	$4,745,872	203,716 tons	$4,929,553	$182,575+
Magnesium salts	6,352 tons	654,372	6,206 tons	642,680	11,692—
Salt	434,237 tons	1,180,929	672,324 tons	1,922,991	742,062+
Soda	179,210 tons	2,028,718	267,723 tons	3,125,078	1,096,360+
Unapportioned		*3,317,642		*5,024,701	1,707,059+
Total values		$11,927,533		$15,645,003	
Net increase					$3,717,470

* Includes bromine, calcium chloride, iodine, and potash.

ALUM MINERALS

Bibliography: State Mineralogist Reports XXXV, XXXVII.

There are several minerals found in California that are considered natural alums. They are hydrous aluminum sulphates combined with sulphates of iron, potassium, sodium or magnesium. The most important are: Alunite, $K_2Al_6(OH)_{12}(SO_4)_4$, a basic hydrous aluminum and potassium sulphate, and Alunogen, $Al_2(SO_4)_3.16H_2O$, an hydrous aluminum sulphate.

In 1938 a small production and some development work was done on an alunogen deposit near Corona, Riverside County. This output was the first recorded commercial production reported in California.

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The annual details are combined under 'Unapportioned' item to conceal the output of the single operator. An alunite deposit near Glen Ellen, Sonoma County, was opened up several years ago and some development work has been done in hopes of commercializing this mineral.

BORATES

Bibliography: State Mineralogist Reports III, X, XII-XV (inc.), XVII-XXIII (inc.), XXV-XXVII (inc.), XXXIII-XXXIV, XXXVI, XXXVII. Bulletins 24, 67, 91.

During the year, there was produced in California a total of 232,833 net tons of borate material, as compared with 242,419 tons for the preceding year. The material shipped during the year included the sodium borates, kernite (rasorite), kramerite from Kern County; also crystallized borax prepared by evaporation of brines at Searles Lake in San Bernardino County and Owens Lake in Inyo County, and a small amount of colemanite from Death Valley, Inyo County.

As the crude ore is not sold as such, but is almost entirely refined into borax of commerce before shipping, and because of the fact that the material varied widely in boric acid content, we have recalculated the tonnage to a basis of 40 per cent A. B. A. This is approximately the average A. B. A. content of colemanite material after calcining, and also of the crystallized borax obtained from evaporation of the lake brines.

Recalculated, the 1942 output totaled 203,716 net tons, valued at $4,929,553, as compared with 224,986 tons worth $4,745,872 for the year 1941. The above came from two properties each in Inyo and San Bernardino counties, and one in Kern County.

Total Production of Borate Materials in California

Borax was first discovered in California in the waters of Tuscan Springs in Tehama County, January 8, 1856. Borax Lake in Lake County was discovered in September of the same year by Dr. John A. Veach. This deposit was worked in 1864-1868, inclusive, and during that time produced 1,181,365 pounds of refined borax. The bulk of it was exported by sea to New York. This was the first commercial output of this salt in the United States, and California is still today the leading American producer of borax, having been for many years the sole producer. California is also the premier world source, today.

Production from the dry lake 'playa' deposits of Inyo and San Bernardino counties began in 1873; but it was not until 1887 that the borax industry was revolutionized by the discovery of the colemanite beds at Calico, in San Bernardino County and later similar beds in Inyo and Los Angeles counties. The colemanite deposits of Ventura County were not worked extensively, owing to lack of transportation facilities. Some production of colemanite has been made from deposits opened up in Clarke County, Nevada. Colemanite was in turn, displaced by the discovery in 1926 of kernite (rasorite) a sodium borate and probertite (kramerite) a hydrous sodium, and calcium borate, near Kramer in Kern County. The brines of Searles Lake are likewise an important source.

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The total production of borate materials in California is shown in the following table:

Total Production of Borate Materials in California

Year	Tons	Value	Year	Tons	Value
1864	12	$9,478	1904	45,647	$698,810
1865	126	94,099	1905	46,334	1,019,158
1866	201	132,538	1906	58,173	1,182,410
1867	220	156,137	1907	53,413	1,200,913
1868	32	22,384	1908	22,200	1,117,000
1869	----------	----------	1909	16,628	1,163,960
1870	----------	----------	1910	16,828	1,177,960
1871	----------	----------	1911	50,945	1,456,672
1872	140	89,600	1912	42,135	1,122,713
1873	515	255,440	1913	58,051	1,491,530
1874	915	259,427	1914	62,500	1,483,500
1875	1,168	289,080	1915	67,004	1,663,521
1876	1,437	312,537	1916	103,523	2,409,375
1877	993	193,705	1917	109,944	2,561,958
1878	373	66,257	1918	88,772	1,867,908
1879	364	65,443	1919	66,791	1,717,192
1880	609	149,245	1920	127,065	2,794,206
1881	690	189,750	1921	50,136	1,096,326
1882	732	201,300	1922	[2]39,087	1,068,025
1883	900	265,500	1923	62,667	1,893,798
1884	1,019	198,705	1924	52,070	1,599,149
1885	942	155,430	1925	46,124	1,526,938
1886	1,285	173,475	1926	47,605	1,625,298
1887	1,015	116,689	1927	72,462	3,043,260
1888	1,405	196,636	1928	109,722	3,378,552
1889	965	145,473	1929	144,678	3,312,085
1890	3,201	480,152	1930	209,869	3,686,817
1891	4,267	640,000	1931	206,405	5,753,037
1892	5,525	838,787	1932	179,356	2,856,470
1893	3,955	593,292	1933	197,495	3,019,513
1894	5,770	807,807	1934	240,696	5,524,262
1895	5,959	595,900	1935	280,249	4,602,064
1896	6,754	675,400	1936	313,389	5,911,093
1897	8,000	1,080,000	1937	326,099	6,206,619
1898	8,300	1,153,000	1938	276,144	5,014,237
1899	20,357	1,139,882	1939	244,819	5,110,807
1900	25,837	1,013,251	1940	212,358	5,254,154
1901	22,221	982,380	1941	224,986	4,745,872
1902	[1]17,202	2,234,994	1942	203,716	4,929,553
1903	34,430	661,400	Totals	4,963,921	$123,921,288

[1] Refined borax.
[2] Recalculated to 40% 'anhydrous boric acid' equivalent beginning with 1922.

BROMINE

Bibliography: State Mineralogist Report XXXVII.

The first commercial production of bromine and bromine compounds was begun during 1926 by the California Chemical Corporation in its plant at Chula Vista, San Diego County, from salt-works bittern waters. This same plant has been recovering magnesium chloride for a number of years. Bromine is also now being made at a similar bittern-water plant at Newark, Alameda County, and beginning in 1940 from brines at Searles Lake, San Bernardino County. The 1942 output is an increase in amount and value as compared with that of 1941. The 1942 yield was the largest annual production on record in California; annual details of which are concealed under the 'Unapportioned' item so as not to reveal the production of the single company which operated both plants.

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The total commercial production of bromine in California is as follows:

Year	Tons	Value	Year	Tons	Value
1926			1935		
1927			1936		
1928			1937		
1929			1938		
1930			1939		
1931			1940		
1932			1941		
1933			1942		
1934					
*	158	$120,480	*	805	$191,465
*	802	552,933	*	914	327,823
*	559	146,547	*	1,579	528,245
			*	2,206	741,790
			Totals	7,023	$2,609,283

* Annual details concealed under 'Unapportioned.'

CALCIUM CHLORIDE

Bibliography: State Mineralogist Report XXXVII U. S. Geol. Surv. Min. Res. 1919, Pt. II. Engineering and Contracting, Roads and Streets, monthly issue, Feb. 6, 1924. 'How to Maintain Roads,' manual of instruction of Dow Chemical Company.

Calcium chloride is hygroscopic, that is, it has an affinity for water. This property is taken advantage of by utilizing this salt as a drying agent.

During 1942 the production of calcium chloride in California came from one property each in Imperial and San Bernardino counties. The annual details are combined under the 'Unapportioned' item to conceal the output of the operator. The 1942 output showed an increase in both amount and value as compared with that of 1941.

Total Calcium Chloride Production in California

Commercial production of calcium chloride in California was first reported to the State Mining Bureau in 1921, from two plants in San Bernardino County, being obtained as a by-product in the refining of salt from deposits in certain of the desert dry lakes. Total production in California is shown in the following tabulation:

Year	Tons	Value	Year	Tons	Value
1921			1934		
1922			1935		
1923			1936		
1924			1937		
1925			1938		
1926			1939		
1927			1940		
1928			1941		
1929			1942		
1930					
1931					
1932					
1933					
*	683	$22,980	*	4,048	$16,196
*	1,204	26,580	*	7,227	35,073
*	10,988	328,876	*	7,279	40,182
*	34,195	508,748	*	7,134	28,856
*	12,020	114,080	*	*	*
*	9,688	103,237	Totals	97,569	$1,240,308
*	3,103	15,500			

* Annual details concealed under 'Unapportioned.'

IODINE

Bibliography: State Mineralogist Reports XXXIV, XXXVI-XXXVII. U. S. Bureau of Mines I. C. 6387.

In 1942 the output of iodine in California came from two plants in Los Angeles County and showed an increase in value as compared

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

with that of 1941. The annual details for 1942 are combined under the 'Unapportioned' item to conceal the output of either operator. The 1942 production was the largest in amount and value so far reported in this State. The combined 1941-1942 output totaled 979,733 pounds valued at $1,207,613.

Total Iodine Production in California

Iodine was first produced in California during 1917 to 1921 as a by-product of potash which was reduced from kelp in an experimental station of U. S. Department of Agriculture at Summerland, but after the armistice the demand for these minerals decreased so that the plant in Santa Barbara County closed. In 1929 the General Salt Company erected a plant which reduces iodine from the waste waters of certain deep oil wells in the Long Beach field. During 1933 two more plants started operation, making a total of three producing plants in the State.

Year	Pounds	Value
1929, 1931, 1933*	696,297	$1,374,311
1934	355,279	423,016
1935, 1936*	487,401	379,702
1937, 1938*	624,318	508,119
1939, 1940*	795,510	862,931
1941, 1942*	979,733	1,207,613
Totals	3,938,538	$4,728,538

* Annual details concealed under 'Unapportioned.'

MAGNESIUM SALTS

Bibliography: State Mineralogist Reports XX, XXI, XXV-XXVI (inc.), XXXIV, XXXVII. Bulletin 91. 'Dictionary of Applied Chemistry,' by Thorpe. U. S. Geol. Surv., Min. Res. of P. S.

There was an output of magnesium salts in California coming from two properties in San Mateo County, and one each in Imperial and San Diego counties, in the amount of 6,260 net tons, valued at $642,680, compared with 6,352 tons, worth $654,372 in 1941. The material from Imperial County was magnesium sulphate; from San Diego County magnesium chloride; and that from San Mateo County magnesium carbonate, hydroxide, oxide, and basic carbonate. Also coming from Alameda County was a tonnage of magnesium hydroxide but not included in the above totals as this material was used as magnesite and therefore included under that substance. The chloride was nearly all sold for use in magnesite stucco and cement mixtures (Sorel cement), also some for road liquor. The carbonate, or bulky white powder, was used as a heat-insulating material, as a substitute for magnesite, as a filler for rubber, paper, paint, etc., and in medicines, in tooth paste, in face powder and as a polish for metal and glass. The sulphate market as in past years was utilized for medicinal and bath purposes. The material coming from San Diego County was residual bitterns from

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

the salt plants and was in part marketed in the liquid form carrying from 35% to 67% $MgCl_2$ and in part as dry crystals, while that from Alameda and San Mateo counties was magnesium carbonate, magnesium hydroxide, and magnesium oxide, obtained by precipitation from sea water.

The average value reported for the chloride produced in California in 1942 was approximately $38.38 per ton f.o.b. plant, as compared with $31.63 in 1941.

Total Production of Magnesium Salts in California

Commercial production of magnesium chloride in California was begun in 1916 by some of the salt companies, from the residual bitterns obtained during the evaporation of sea water for its sodium chloride. In addition, some magnesium sulphate, or 'epsom salts' has also been made, but in smaller amount, and magnesium carbonate by a patented process, direct from sea water.

The total production of magnesium salts in California, since the beginning of the industry here, is shown in the following tabulation:

Year	Tons	Value	Year	Tons	Value
1916	851	$6,407	1931*	2,749	$217,979
1917	1,064	34,973	1932*		
1918	1,008	29,955	1933	2,073	159,660
1919	1,616	82,457	1934	2,325	194,642
1920	3,150	107,787	1935	2,785	235,531
1921	4,153	106,140	1936	3,798	347,838
1922	3,036	89,788	1937	3,867	316,669
1923	3,662	116,031	1938	24,176	469,636
1924	4,823	145,883	1939	3,895	382,457
1925	4,221	132,553	1940	4,325	419,666
1926	4,881	124,470	1941	6,352	654,372
1927*	6,241	139,589	1942	6,260	642,680
1928*					
1929*	4,914	333,906	Totals	106,225	$5,491,069
1930*					

* Annual details concealed under 'Unapportioned.'

NITRATES

Bibliography: State Mineralogist Reports XV, XXV, XXVI, XXVII, XXXIV, XXXVII. Bulletins 24, 67, 91. U. S. G. S., Press Bulletin No. 373, July, 1918. Smithsonian Inst., Publ. No. 2421, 1916.

Nitrates of sodium, potassium and calcium have been found in various places in the desert regions of the State, but no deposit of commercial value has been developed as yet. It is hoped that a closer search may some day be rewarded by workable discoveries. At present the principal commercial source of nitrates is the Chilean saltpeter (sodium nitrate) deposits in South America.

The fixation of atmospheric nitrogen electrically has been accomplished successfully in Germany and Scandinavia. The possibilities of cheap hydroelectric power in California make the subject one of interest to us, as we have also the natural raw materials and chemicals to go with the explosives. Sodium and potasium cyanides can be made by fixation of atmospheric nitrogen electrically.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

POTASH

Bibliography: State Mineralogist Reports XV, XVIII, XX, XXII, XXV-XXXVII (inc.), XXXIV, XXXVII. Bulletins 24, 67, 91. U. S. G. S., Min. Res. 1913, 1914, 1915. Senate Doc. No. 190, 62 Congress, 2d Session. Mining & Sci. Press, Vol. 112, p. 155; Vol. 114, p. 789. Eng. & Min. Jour.-Press, Vol. 117, p. 557, Apr. 5, 1924.

The 1942 production of potash in California came from a single operator in San Bernardino County, the details of which are concealed under the 'Unapportioned' item. This was principally chloride and the product averaged 60% equivalent K_2O content. The material was sold mainly for fertilizer manufacture.

Total Production of Potash in California

Potash production began commercially in California in 1914, with a small yield from kelp. Practically all of the output now comes from deposits of potash-bearing residues and brines in the old lake beds of the desert regions, particularly Searles Lake, San Bernardino County. A small amount has been made from salt-works bitterns, and for a time there was some from Portland cement dust. Some also has been obtained from molasses distillery-slops char.

The annual amounts and values of these potash materials, since their beginning in California in 1914, have been as follows:

Year	Tons	Value	Year	Tons	Value
1914	10	$460	1930*	172,263	$5,500,536
1915	1,076	19,391	1931*		
1916	17,808	663,605	1932*	153,147	3,932,721
1917	129,022	4,202,889	1933*		
1918	49,381	6,808,976	1934*	355,604	3,750,809
1919	28,118	2,415,963	1935*		
1920	26,298	1,465,463	1936*	358,417	6,988,922
1921	14,806	390,210	1937*		
1922	17,776	584,388	1938*	383,981	9,057,866
1923	29,597	709,836	1939*		
1924	33,107	747,407	1940*	310,023	6,058,274
1925	36,355	829,770	1941*		
1926	32,884	812,285	1942	*	*
1927	67,340	1,952,852			
1928*	178,680	5,522,350	Totals	2,295,793	$61,419,973
1929*					

* Annual details concealed under 'Unapportioned.'

SALT

Bibliography: State Mineralogist Reports II, XII-XV (inc.), XVII-XXIII (inc.), XXV-XXVII (inc.), XXXIV-XXXVIII (inc.). Bulletins 24, 67, 91. U. S. Geol. Survey, Bull. 669. U. S. Bur. of Mines, Bull. 146.

Most of the salt production in California is obtained by evaporation of water of the Pacific Ocean, plants being located on the shores of San Francisco, Monterey, and San Diego bays, and at Long Beach. Additional amounts are derived from lakes and lake beds in the desert regions (in part, rock salt), mainly in Imperial, Kern, and San Bernardino counties, and evaporation of alkaline lake water in Modoc County. A small amount of valuable medicinal salts has been obtained

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

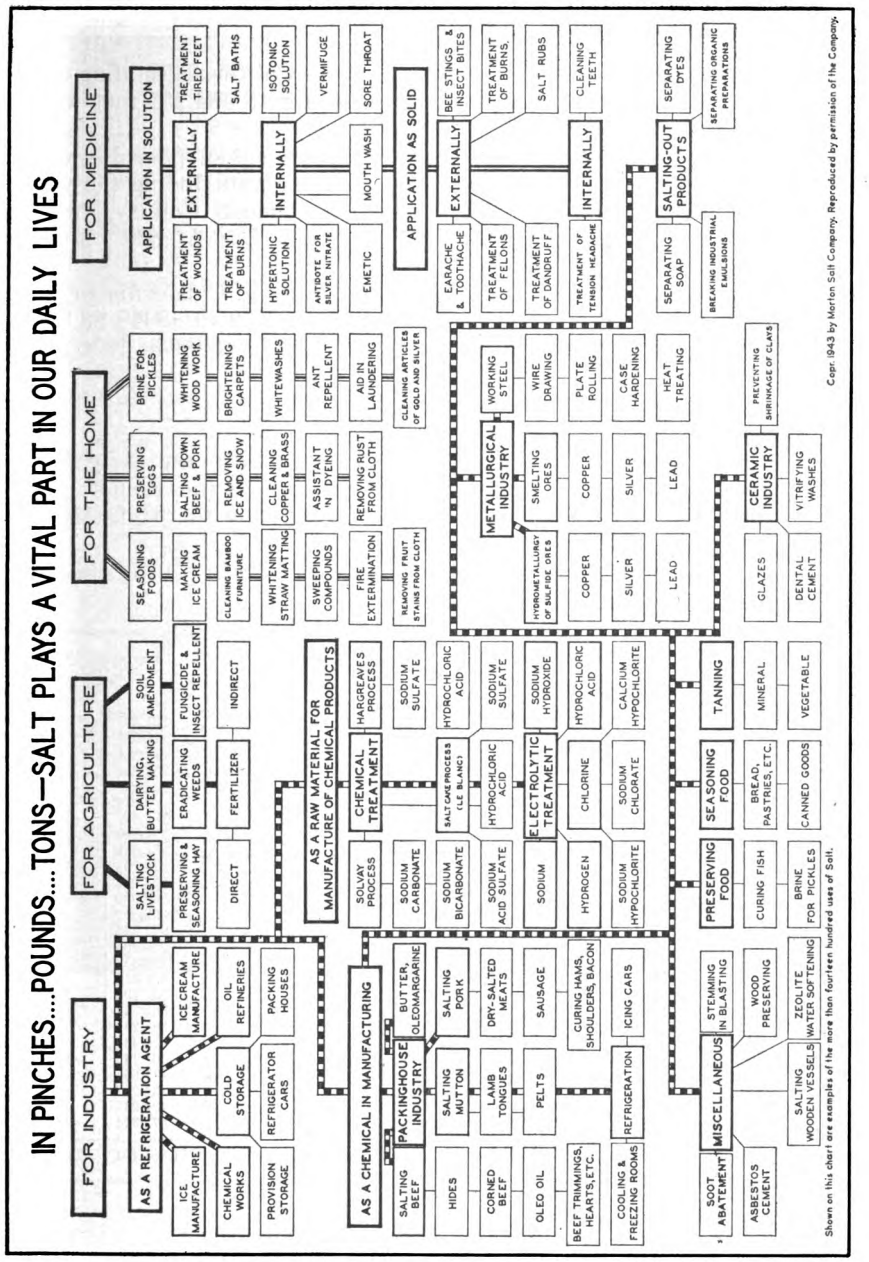


Chart showing diversity in use of salt. By courtesy of Morton Salt Co.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

by evaporation of the water of Lake Mono, Mono County, and from a mineral spring in Butte County.

During 1942 there was an output of salt in California totaling 672,324 net tons valued at $1,922,991, as compared with 434,237 tons worth $1,180,929 in 1941.

The 1942 yield was the largest in amount and was surpassed in value only by that of 1929. There were 15 operating plants during the year; four in San Bernardino County, three in Alameda County, two in Imperial County, and one each in Inyo, Kern, Los Angeles, Modoc, Monterey, Orange and San Diego counties.

The overage value reported by salt producers in California in 1942 was $2.90 per ton, f.o.b. plant, compared with $2.72 in 1941; $2.79 in 1940; $2.75 in 1939; $2.78 in 1938; $2.82 in 1937; $3.08 in 1936; and $3.36 in 1935.

Production of Salt in California, by Years

Although salt has been made in California since the early '60's, there are no definite or authenticated records for the earlier years before the beginning of the statistical tabulations by the State Mining Bureau.

Amount and value of annual production of salt in California from 1887 is shown in the following tabulation:

Year	Tons	Value	Year	Tons	Value
1887	28,000	$112,000	1916	186,148	$455,695
1888	30,800	92,400	1917	227,825	584,373
1889	21,000	63,000	1918	212,076	806,328
1890	8,729	57,085	1919	233,994	896,963
1891	20,094	90,303	1920	230,638	972,648
1892	23,570	104,788	1921	197,989	832,702
1893	50,500	213,000	1922	223,238	819,187
1894	49,131	140,087	1923	275,979	1,130,670
1895	53,031	150,576	1924	318,800	1,159,137
1896	64,743	153,244	1925	284,068	949,826
1897	67,851	157,520	1926	311,761	1,124,978
1898	93,421	170,855	1927	263,028	639,127
1899	82,654	149,588	1928	340,580	1,024,656
1900	89,338	204,754	1929	392,039	2,665,436
1901	126,218	366,376	1930	347,945	1,167,487
1902	115,208	205,876	1931	330,951	1,233,567
1903	102,895	211,365	1932	256,353	918,480
1904	95,968	187,300	1933	321,312	1,251,024
1905	77,118	141,925	1934	332,194	1,222,810
1906	101,650	213,228	1935	365,711	1,230,480
1907	88,063	310,967	1936	398,249	1,227,505
1908	121,764	281,469	1937	370,431	1,044,325
1909	155,680	414,708	1938	395,746	1,099,737
1910	174,920	395,417	1939	417,956	1,174,386
1911	173,332	324,255	1940	462,282	1,290,728
1912	185,721	383,370	1941	434,237	1,180,929
1913	204,407	462,681	1942	672,324	1,922,991
1914	223,806	583,553			
1915	169,028	368,737	Totals	11,601,494	$36,736,602

SODA

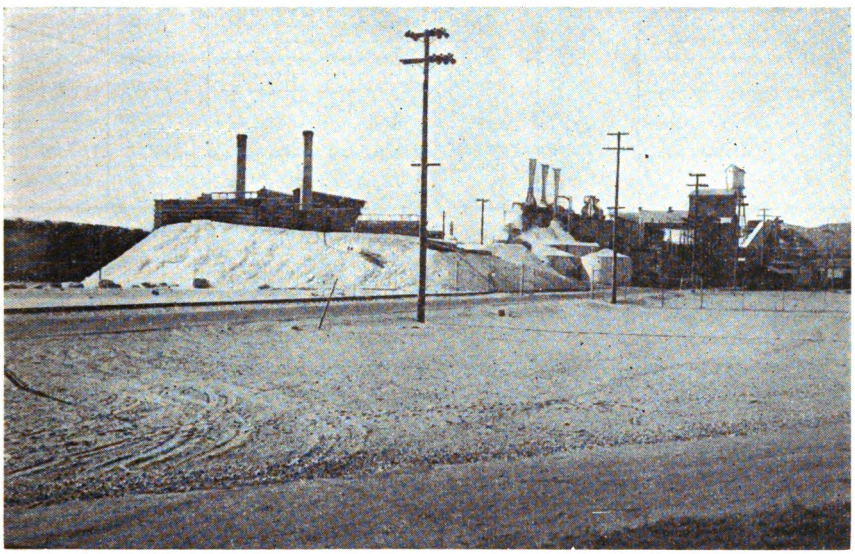
Bibliography: State Mineralogist Reports XII, XIII, XV, XVII, XVIII, XX, XXII, XXIII, XXV-XXIX (inc.), XXXIV XXXVI-XXXVIII. Bulletins 24, 67, 91. U. S. Geol. Surv., Bull. 717.

The production of sodium salts in California in 1942 included soda ash, and trona, from plants at Owens Lake, Inyo County; and soda ash,

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

salt cake, and trona (sequi-carbonate, a double salt of Na_2CO_3 and $NaHCO_3$) from Searles Lake, San Bernardino County. The plant on Dale Lake near Amboy and Searles Lake, San Bernardino County, started operations during the year 1940 and made shipments of salt cake in 1941. There were no shipments of salt cake (sulphate) from Carrizo Plains, San Luis Obispo County. Shipments were made in 1942 amounting to a total of 267,723 net tons valued at $3,125,078, as compared with 179,210 tons worth $2,028,718 in 1941. The 1942 output was the largest annual yield as to amount and value and consisted of 145,957 tons of trona and soda ash worth $2,257,660 and 121,766 tons of salt cake worth $867,418.

The soda ash was used mainly in the manufacture of soap, glass, paper, oil refining, sugar refining, and chemicals; and the trona for metallurgical purposes. The salt cake or sodium sulphate was used in the manufacture of paper, glass, and in chemicals.



American Potash and Chemical Co., at Searles Lake, San Bernardino County, California. Section of soda plant. Photo by Walter W. Bradley.

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Soda Production of California, by Years

The total output, showing amount and value of these materials in California since the inception of the statistical records of the State Mining Bureau, is given in the table which follows:

Year	Tons	Value	Year	Tons	Value
1894	1,530	$20,000	1919	21,294	$721,958
1895	1,900	47,500	1920	32,407	1,164,898
1896	3,000	65,000	1921	14,828	438,996
1897	5,000	110,000	1922	20,084	573,661
1898	7,000	154,000	1923	34,885	764,284
1899	10,000	250,000	1924	32,536	711,796
1900	1,000	50,000	1925	48,625	947,649
1901	8,000	400,000	1926	63,333	1,305,802
1902	7,000	50,000	1927	62,571	1,478,239
1903	18,000	27,000	1928	80,838	1,469,297
1904	12,000	18,000	1929	90,646	1,838,657
1905	15,000	22,500	1930	90,122	1,627,344
1906	12,000	18,000	1931	78,701	1,217,811
1907			1932	58,017	826,369
1908	9,600	14,400	1933	70,598	1,019,130
1909	7,712	11,593	1934	99,380	1,219,561
1910	8,125	11,862	1935	125,504	1,341,045
1911	9,023	52,887	1936	144,314	1,412,788
1912	7,200	37,094	1937	153,685	1,461,057
1913	1,861	24,936	1938	178,105	2,023,610
1914	6,522	115,396	1939	200,049	2,055,608
1915	5,799	83,485	1940	228,108	2,339,639
1916	10,593	264,825	1941	179,210	2,028,718
1917	24,505	928,578	1942	267,723	3,125,078
1918	20,447	855,423			
			Totals	2,688,380	$36,745,474

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CHAPTER SEVEN

BY COUNTIES

Introductory

The State of California includes a total area of 158,297 square miles, of which 156,803 square miles are of land (according to 1940 census resurvey). The maximum width is 235 miles, the minimum 148 miles, and the length from the northwest corner to the southeast corner is 775 miles. The State is divided into fifty-eight counties. The 1940 census figures show a total population for California of 6,907,387. Minerals of commercial value exist in every county, and during 1940 some active production was reported to the State Division of Mines from all of the fifty-eight.

Rank of Counties in Mineral Yield, 1942

Of the ten leading counties in point of total value of mineral output during 1942, the first four Los Angeles, Kern, Orange, Fresno; and Ventura, sixth; Kings, seventh; and Santa Barbara, eighth owe their position to petroleum and natural gas. Los Angeles County due to its crude oil led all other counties in 1942 and is credited with 26% of the State's mineral value, holding this position since 1923 when it passed Kern County, which led for many years. San Bernardino County, fifth, owes its position to cement, borax, potash, and soda; Sacramento County, ninth, to gold, natural gas and miscellaneous stone; and Santa Clara County, tenth, to cement.

There were thirty-six counties having a mineral production value in excess of a million dollars in 1942. The value of cement, gold, and natural gas exceeded the million dollar mark in eight counties each; petroleum in seven counties; borates and brick and hollow building tile in two counties each; diatomite, potash, quicksilver, soda, and tungsten in one each.

In point of variety and diversity San Bernardino County led all others in 1942 with thirty-three different mineral substances on its commercial list, followed in turn by Inyo County with twenty-one; Los Angeles with nineteen; Kern County with eighteen; Riverside County with sixteen; Imperial and San Diego counties each with fifteen; Fresno and Orange counties each with fourteen; San Luis Obispo County with thirteen; El Dorado, Placer, Santa Barbara, Shasta, and Siskiyou counties each with twelve; Butte, Stanislaus, and Trinity counties each with eleven; Alameda, Amador, Calaveras, Sacramento, and Santa Clara counties each with ten.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Value of Mineral Output by County for 1942:

County	value	County	value
1. Los Angeles	$106,120,578	31. Placer	$1,335,042
2. Kern	75,529,067	32. Mariposa	1,321,238
3. Orange	27,508,497	33. El Dorado	1,320,250
4. Fresno	24,790,524	34. San Diego	1,188,661
5. San Bernardino	24,638,661	35. Trinity	1,053,442
6. Ventura	23,084,373	36. San Luis Obispo	1,031,114
7. Kings	12,955,120	37. Tuolumne	854,080
8. Santa Barbara	11,415,045	38. Lake	832,712
9. Sacramento	9,884,746	39. Sierra	640,895
10. Santa Clara	9,204,217	40. Yolo	617,418
11. Inyo	8,134,848	41. Monterey	576,152
12. Riverside	7,271,099	42. Imperial	507,130
13. Alameda	6,112,794	43. Glenn	504,755
14. Nevada	5,956,238	44. Del Norte	401,253
15. Contra Costa	4,066,476	45. Plumas	346,936
16. Shasta	4,025,223	46. Humboldt	294,805
17. San Mateo	3,874,496	47. Marin	229,269
18. Santa Cruz	3,506,972	48. Tulare	168,743
19. Yuba	3,244,771	49. Mono	140,746
20. San Benito	3,104,054	50. Mendocino	133,995
21. Calaveras	2,998,235	51. San Francisco	110,140
22. Solano	2,720,428	52. Sutter	95,438
23. Butte	2,400,853	53. Madera	87,727
24. Amador	2,092,030	54. Modoc	53,330
25. San Joaquin	2,079,078	55. Tehama	47,533
26. Merced	1,848,319	56. Colusa	41,710
27. Sonoma	1,655,326	57. Lassen	35,236
28. Siskiyou	1,620,514	58. Alpine	3,097
29. Stanislaus	1,475,362		
30. Napa	1,447,638	Total value	$408,738,434

ALAMEDA

Land area: 732 square miles.
Population: 513,011 (1940 census).
Location: East side of San Francisco Bay.
County seat: Oakland.
References: State Mineralogist Report XVII : XVIII : XX : XXVI (Oct., 1929); XXXV.

Alameda, while in no sense one of the 'mining counties,' came thirteenth on the list of counties as to value, with a mineral production for 1942 worth $6,112,794 and had ten different substances. This was an increase over the 1941 output which was valued at $4,447,145.

Commercial production for 1942 was as follows:

Substance	Amount	Value
Clay (pottery)	8,435 tons	$9,668
Stone, Miscellaneous	-----	3,914,518
Unapportioned *	-----	2,188,608
Total value		$6,112,794

* Includes brick and hollow building tile, bromine, copper, gypsum (manufactured from sea water), limestone (shells), magnesite (part from sea water), manganese ore, salt.

ALPINE

Land area: 776 square miles.
Population: 323 (1940 census).
Location: On eastern border of State, south of Lake Tahoe.
County seat: Markleeville.
References: State Mineralogist Report XV : XVII : XVIII : XXVII (Oct., 1931) : XXV : XXXVII.

Alpine County ranked fifty-eighth in value of output for 1942 which was $3,097, compared with $6,996 in 1941. The 1942 production was as follows:

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Substance	Amount	Value
Gold	17 fine ozs.	$595
Silver	3 fine ozs.	2
Other minerals	--	2,500
Total value		$3,097

AMADOR

Land area: 601 square miles.
Population: 8,973 (1940 census).
Location: East-central part of State—Mother Lode District.
County seat: Jackson.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XX : XXII (April, 1927) : XXX : XXXV : XXXVII.

Amador County ranked twenty-fourth as to value of mineral output for 1942 with ten different substances worth $2,092,030, compared with $3,724,412 in 1941.

Amador at one time led the State in gold production, though exceeded in 1920-1923 and in 1926-1927 by Yuba and Nevada counties; but in 1925 and 1928 by Yuba only, in 1929-1932 by Nevada only, and in 1931-1936 and 1939-1941 by Nevada and Sacramento, and only ranked 6th in 1942.

Commercial production for 1942 was as follows:

Substance	Amount	Value
Clay (pottery)	119,596 tons	$254,771
Copper	1,854 lbs.	224
Gold	49,474 fine ozs.	1,731,590
Lead	10,559 lbs.	708
Silver	11,091 fine ozs.	7,887
Stone, Miscellaneous	------	17,322
Unapportioned *	------	79,538
Total value		$2,092,030

* Includes brick, coal, manganese ore, platinum.

BUTTE

Land area: 1722 square miles.
Population: 42,840 (1940 census).
Location: North-central portion of State.
County seat: Oroville.
References: State Mineralogist Report XV: XVII:XVIII:XXIV: XXVI (Oct., 1930) : XXXI (Jan., 1936).

Butte County ranked twenty-third in regard to value of mineral output in 1942 and fourth in respect to gold, with eleven different substances, having a total value of $2,400,858 compared with $3,171,872 in 1941.

Commercial production for 1942 was as follows:

Substance	Amount	Value
Gold	60,916 fine ozs.	$2,132,060
Silver	20,350 fine ozs.	14,471
Stone, Miscellaneous	------	249,337
Unapportioned *	------	4,990
Total value		$2,400,858

* Includes chromite, clay (pottery), copper, lead, mineral water, natural gas, platinum.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

CALAVERAS

Land area: 1027 square miles.
Population: 8,221 (1940 census).
Location: East-central portion of State—Mother Lode District.
County seat: San Andreas.
References: State Mineralogist Report XIV:XVII:XVIII:XIX: XX : XXI : XXXII (July, 1936) : XXXV : XXXVII.

Calaveras County ranked twenty-first in California in regard to value of mineral output in 1942, and sixth in respect to gold, with a total of $2,998,235, as compared with $4,394,039 in 1941.

Commercial production for 1942 consisting of ten different substances, was as follows:

Substance	*Amount*	*Value*
Copper	531,618 lbs.	$64,326
Gold	28,004 fine ozs.	980,140
Silver	8,380 fine ozs.	5,959
Stone, Miscellaneous	------	22,823
Zinc	8,923 lbs.	830
Unapportioned *	------	1,924,157
Total value		$2,998,235

* Includes cement, chromite, clay (pottery), lead.

COLUSA

Land area: 1140 square miles.
Population: 9,788 (1940 census).
Location: Sacramento Valley.
County seat: Colusa.
References: State Mineralogist Report XIV : XVII : XVIII : XXV (April, 1929) : XXXV.

Colusa County ranked fifty-sixth in regard to value of mineral output in 1942, with four different mineral substances, worth a total of $41,710, as compared with $41,859 in 1941.

Commercial production for 1942 consisted of mineral water, quicksilver, sandstone, and miscellaneous stone.

CONTRA COSTA

Land area: 714 square miles.
Population: 100,450 (1940 census).
Location: East side of San Francisco Bay.
County seat: Martinez.
References: State Mineralogist Report XVII : XVIII : XXIII (Jan., 1927) : XXXV.

Contra Costa County stands fifteenth on the list in respect to value of mineral output for 1942, with eight different substances worth $4,066,476, as compared with $3,263,091 in 1941.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Stone, Miscellaneous	------	$1,153,454
Unapportioned *	------	2,913,022
Total value		$4,066,476

* Includes brick and hollow building tile, cement, clay (pottery), mineral water, quicksilver, silica (glass sand).

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

DEL NORTE

Land area: 1024 square miles.
Population: 4,745 (1940 census).
Location: Extreme northwest corner of State.
County seat: Crescent City.
References: State Mineralogist Report XIV : XVII : XXI (July, 1925) : XXIX (Jan.-April, 1933) : XXXIV : XXXV : XXXVII.

Del Norte County was in forty-fourth place as to mineral production for 1942 with five different substances worth $401,253, as compared with $112,253 in 1941.

Commercial production in 1942 was as follows:

Substance	*Amount*	*Value*
Gold	5 fine ozs.	$175
Silver	3 fine ozs.	2
Stone, Miscellaneous	--	18,709
Other minerals	--	382,367
Total value		$401,253

EL DORADO

Land area: 1753 square miles.
Population: 13,229 (1940 census).
Location: East-central portion of the State, northernmost of the Mother Lode counties.
County seat: Placerville.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XX : XXII (Oct., 1926) : XXXI : XXXIV (July, 1938) : XXXV : XXXVIII.

El Dorado, which contains the location where gold in California was first heralded to the world, comes thirty-third on the list of counties ranked according to value for 1942, with 12 different mineral substances worth $1,320,250. In addition to the segregated figures here given, a large tonnage of limestone was formerly shipped for use in cement manufacture, the value being included in the State's total for cement. The 1941 output was valued at $2,294,164.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	18,194 fine ozs.	$636,790
Limestone	147,469 tons	247,522
Silver	2,284 fine ozs.	1,624
Stone, Miscellaneous	------	15,396
Unapportioned *	------	418,918
Total value		$1,320,250

* Includes platinum, chromite, copper, lead, slate, soapstone.

FRESNO

Land area: 5950 square miles.
Population: 178,565 (1940 census).
Location: South-central portion of State.
County seat: Fresno.
References: State Mineralogist Report XIV : XVII : XVIII : XXV (July, 1929) : XXXV : XXXVII.

Fresno County, 4th in importance as a mineral producer among the counties of California, reports an output for 1942 of fourteen different

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

mineral substances, with a total value of $24,790,524, as compared with the 1941 value of $23,751,031.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	1,166 fine ozs.	$40,810
Natural gas	59,828,203 M. cu. ft.	2,946,323
Petroleum	23,959,303 bbls.	21,206,580
Silver	201 fine ozs.	143
Stone, Miscellaneous	------	391,896
Unapportioned *	------	204,772
Total value		$24,790,524

* Includes brick and hollow building tile, chromite, clay (pottery), feldspar, granite, gypsum, quicksilver, tungsten ore.

GLENN

Land area: 1259 square miles.
Population: 12,195 (1940 census).
Location: West side of Sacramento Valley.
County seat: Willows.
References: State Mineralogist Report XIV : XVII : XVIII : XXXV : XXXVII.

Glenn County stands forty-third as a mineral producing county of the State for 1942, and owes its position to the presence of large deposits of sand and gravel, much of which is used as railroad ballast, and chromite.

Commercial production for 1942 totaled $504,755 which is an increase from $33,204, the 1941 total.

HUMBOLDT

Land area: 3634 square miles.
Population: 45,812 (1940 census).
Location: Northwestern portion of State, bordering on Pacific Ocean.
County seat: Eureka.
References: State Mineralogist Report XIV : XVII : XVIII : XXI (July, 1925) : XXXV : XXXVII (Oct., 1941).

Humboldt County ranked forty-sixth in the value of its mineral output among the counties of the State for 1942 with eight different mineral substances valued at $294,805, compared with the 1941 output worth $85,267.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Copper	6,409 lbs.	$775
Gold	4,023 fine ozs.	140,805
Silver	637 fine ozs.	453
Stone, Miscellaneous	----	66,325
Unapportioned *	----	86,447
Total value		$294,805

* Includes chromite, manganese ore, natural gas.

IMPERIAL

Land area: 4089 square miles.
Population: 59,740 (1940 census).
Location: Extreme southeast corner of the State.
County seat: El Centro.

Generated on 2024-09-24 16:03 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

References: State Mineralogist Report XIV : XVII : XVIII : XIX : XX : XXII (April, 1926) : XXXIV-XXXVI (inc.), XXXVIII (April, 1942).

Imperial County ranked forty-second in total value of mineral output for 1942, with sixteen different mineral substances, worth $507,130, compared with $578,808 for 1941.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	174 fine ozs.	$6,090
Silver	169 fine ozs.	120
Stone, Miscellaneous	---	62,470
Unapportioned *	---	438,450
Total value		$507,130

* Includes calcium chloride, carbon dioxide, copper, lead, gems, gypsum, mangnesium chloride, manganese ore, salt, kyanide, salt cake, strontium.

INYO

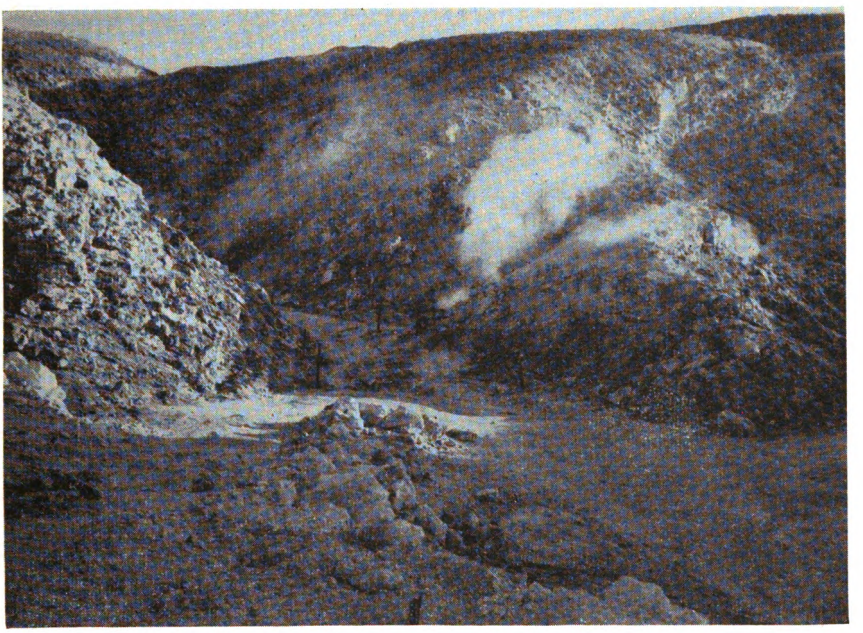
Land area: 10,019 square miles.

Population: 7625 (1940 census).

Location: Lies on eastern border of State, north of San Bernardino County.

County seat: Independence.

References: State Mineralogist Report XV : XVII : XVIII : XX : XXII (Oct., 1926) : XXVII : XXX : XXXIII : XXXIV (Oct., 1938) : XXXV-XXXVII (inc.).



Quicksilver mine at Coso Hot Springs, Inyo County. Photo by Walter W. Bradley

Inyo County's mineral output for 1942 reached a total value of $8,134,848, having twenty-one different mineral substances and standing

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

eleventh among the counties of the State as to value of production. The 1941 yield was worth $5,020,026.

Commercial production for 1942 was as follows:

Substance	Amount	Value
Copper	753,556 lbs.	$91,180
Gold	11,710 fine ozs.	409,850
Lead	10,170,864 lbs.	681,448
Talc	29,000 tons	356,345
Silver	333,368 fine ozs.	237,062
Stone, Miscellaneous	------	171,559
Zinc	680,422 lbs.	63,279
Unapportioned *	------	6,124,125
Total value		$8,134,848

* Includes antimony, bentonite, borates, dolomite, iron ore, limestone, molybdenum ore, pumice, quicksilver, salt, soda, sulphur, tungsten ore.

KERN

Land area: 8003 square miles.
Population: 135,124 (1940 census).
Location: South-central portion of State.
County Seat: Bakersfield.
References: State Mineralogist Report XIV : XVII : XVIII : XIX : XX : XXV (Jan., 1929) : XXIX (July-Oct., 1933) : XXX : XXXIV : XXXVII (inc.).

Kern County, because of its immensely productive oil fields, for many years stood preeminent among all counties of California in the value of its mineral output. It was surpassed by Los Angeles and Orange counties in 1923, but by Los Angeles only in 1924-1942, for which petroleum is responsible; it also rates fifth as a gold producing county. The 1942 production consisted of eighteen different mineral substances valued at $75,529,067, compared with the 1941 output worth $70,854,548.

Commercial production for 1942 was as follows:

Substance	Amount	Value
Clay (pottery and oil well drilling mud)	71,172 tons	$118,694
Copper	2,172 lbs.	263
Gold	56,914 fine ozs.	1,991,990
Gypsum	156,104 tons	206,659
Lead	17,615 lbs.	1,180
Natural gas	70,890,547 M. cu. ft.	3,431,558
Petroleum	72,093,741 bbls.	64,477,255
Silver	597,683 fine ozs.	425,019
Stone, Miscellaneous	------	449,160
Unapportioned *	------	4,427,289
Total value		$75,529,067

* Includes antimony, bentonite, borates, cement, volcanic ash, salt, silica (quartz), tungsten ore.

KINGS

Land area: 1559 square miles.
Population: 35,168 (1940 census).
Location: South-central portion of the State.
County seat: Hanford.
References: State Mineralogist Report IV : XVII : XVIII : XXVI (Oct., 1930) : XXXV.

Kings County, previous to the discovery of Kettleman Hills oil fields in 1928, had little or no mineral output, but in 1929 it ranked seventh in total value of annual mineral production, seventh in 1930, 1938 and 1941-1942; third in 1931; eighth in 1936-1937; sixth in 1939.

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Commercial production for 1942 was as follows:

Substance	Amount	Value
Natural gas	37,266,063 M. cu. ft.	$1,821,000
Petroleum	8,906,011 bbls.	11,131,160
Other minerals	------	2,960
Total value		$12,955,120

LAKE

Land area: 1278 square miles.
Population: 8,069 (1940 census).
Location: About fifty miles north of San Francisco Bay and the same distance inland from the Pacific Ocean.
County seat: Lakeport.
References: State Mineralogist Report XIV : XVII : XVIII : XX : XXV (July, 1929) : XXXIV : XXXV.

Lake County was in thirty-eighth place as to the value of mineral output for 1942, with six different mineral substances, worth $832,712, compared with $1,091,883 in 1941.

Commercial production in 1942 was as follows:

Substance	Amount	Value
Mineral water	9,100 gals.	$1,800
Stone, Miscellaneous	----	37,591
Unapportioned *	----	793,321
Total value		$832,712

* Includes manganese ore, natural gas, quicksilver.

LASSEN

Land area: 4531 square miles.
Population: 14,479 (1940 census).
Location: Northeast portion of State.
County seat: Susanville.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XXV (Jan., 1929) : XXX : XXXII (Oct., 1936).

Lassen County was in fifty-seventh place as a mineral producer for 1942, with an output of $35,236, compared with $39,322 which was the value for the previous year.

Commercial production for 1942 included granite and miscellaneous stone.

LOS ANGELES

Land Area: 4067 square miles.
Population: 2,785,643 (1940 census).
Location: One of the southwestern coast counties.
County seat: Los Angeles.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XX : XXIII (July, 1927) : XXX : XXXIII (July, 1937) : XXXIV-XXXVI.

The mineral production of Los Angeles County for the year 1942 amounted in value to $106,120,578, as compared with the 1941 total worth $101,657,195. This accounted for 26% of the entire State's total for 1942 and ranked Los Angeles first in the State as a mineral produced.

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Commercial production for 1942 consisted of nineteen substances and was as follows:

Substance	*Amount*	*Value*
Brick	102,751 M.	$2,679,889
Hollow building tile	3,462 tons	34,910
Clay (pottery and oil well drilling)	30,480 tons	67,272
Gold	479 fine ozs.	16,765
Mineral water	8,281,287 gals.	283,745
Natural gas	91,719,975 M. cu. ft.	6,186,796
Petroleum	87,248,536 bbls.	90,620,837
Silver	229 fine ozs.	163
Stone, Miscellaneous	------	5,087,331
Unapportioned *	------	1,142,870
Total value		$106,120,578

* Includes cement (see county of origin of clinker), copper, diatomite, dolomite, iodine, lead, limestone, salt, sandstone, titanium.

MADERA

Land area: 2112 square miles.
Population: 23,314 (1940 census).
Location: East-central portion of State.
County seat: Madera.
References: State Mineralogist Report XIV : XVII : XVIII : XXIV (Oct., 1928) : XXX : XXXI : XXXIV : XXXVII : XXXVIII.

Madera County was in fifty-third place as a mineral producer for 1942, with an output of six different mineral substances valued at $87,727, compared with $180,330 for 1941.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Copper	64,988 lbs.	$7,864
Gold	717 fine ozs.	25,095
Silver	242 fine ozs.	172
Unapportioned *	------	54,596
Total value		$87,727

* Includes granite, volcanic ash, miscellaneous stone.

MARIN

Land area: 529 square miles.
Population: 52,907 (1940 census).
Location: Adjoins San Francisco on the north.
County seat: San Rafael.
References: State Mineralogist Report XIV : XVII : XVIII : XXII (July, 1926) : XXIX : XXXV.

Marin County had forty-seventh place as to the value of mineral output for 1942, with five different mineral substances. The total was $229,269, compared with $186,322 in 1941.

Commercial production included mineral water, manganese ore, crushed rock, sand and gravel, and pottery clay.

MARIPOSA

Land area: 1453 square miles.
Population: 5,605 (1940 census).
Location: Most southerly of the Mother Lode counties. East central portion of State.
County seat: Mariposa.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

References: State Mineralogist Report XIV : XVII : XVIII : XXIV (April, 1928) : XXXI (Jan., 1935) : XXXV : XXXVII.

Mariposa County is one of the distinctly *mining* counties of the State, although it stands but thirty-second on the list of counties in regard to the value of its mineral output for 1942, with a total of $1,321,238, as compared with $1,327,594 for 1941. Mariposa County is also the source of a large tonnage of limestone annually, which is otherwise credited to cement manufacture in Merced County.

Commercial production with eight different mineral substances for 1942, was as follows:

Substance	*Amount*	*Value*
Copper	26,973 lbs.	$3,264
Gold	29,292 fine ozs.	1,025,220
Lead	15,782 lbs.	1,057
Silver	9,619 fine ozs.	6,840
Unapportioned *	-----	284,857
Total value		$1,321,238

* Includes barite, silica (quartz), miscellaneous stone, manganese ore.

MENDOCINO

Land area: 3452 square miles.
Population: 27,864 (1940 census).
Location: Joins Humboldt County on the south and bounded by the Pacific Ocean on the west.
County seat: Ukiah.
References: State Mineralogist Report XIV : XVII : XVIII : XIX : XX : XXXV.

Mendocino County's mineral output for 1942 was valued at $133,995 which gave it a rank of fiftieth among the counties of the State as a mineral producer with $75,074 for 1941.

With six substances, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Stone, Miscellaneous	------	$57,368
Unapportioned *	------	76,627
Total value		$133,995

* Includes carbon dioxide, chromite, manganese ore, natural gas, quicksilver.

MERCED

Land area: 1995 square miles.
Population: 46,988 (1940 census).
Location: About the geographical center of the State.
County seat: Merced.
References: State Mineralogist Report XIV : XVII : XVIII : XXI (April, 1925) : XXXI (Jan., 1935) : XXXV.

Merced County ranked twenty-sixth as to the value of mineral output for 1942, with six different mineral substances worth $1,848,319, compared with $2,579,986 for 1941.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	20,053 fine ozs.	$701,855
Silver	1,942 fine ozs.	1,381
Stone, Miscellaneous	-----	184,196
Other minerals	-----	960,887
Total value		$1,848,319

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

MODOC

Land area: 3823 square miles.
Population: 8,713 (1940 census).
Location: The extreme northeast corner of the State.
County seat: Alturas.
References: State Mineralogist Report XV : XVII : XVIII : XXV (Jan., 1929) : XXX : XXXII (Oct., 1936) : XXXV.

Modoc County in fifty-fourth place for 1942, with four different mineral substances, reported a commercial production as follows:

Substance	*Amount*	*Value*
Stone, Miscellaneous	----	$49,778
Unapportioned *	-----	3,552
Total value		$53,330

* Includes gems, pumice, salt.

MONO

Land area: 3030 square miles.
Population: 2,299 (1940 census).
Location: Is bordered by the State of Nevada on the east and is about in the central portion of the State measured on a north and south line.
County seat: Bridgeport.
References: State Mineralogist Report XV : XVII : XVIII : XX : XXIII (Oct., 1927) : XXX : XXXIV : XXXV : XXXVI (April, 1940) : XXXVII : XXXVIII.

Mono County is forty-ninth place with nine different mineral substances, reported a commercial production for 1942 as follows:

Substance	*Amount*	*Value*
Gold	1,833 fine ozs.	$64,155
Silver	15,581 fine ozs.	11,080
Unapportioned *	-----	65,511
Total value		$140,746

* Includes copper, lead, manganese ore, pumice, andalusite, misellaneous stone, tungsten ore.

MONTEREY

Land area: 3330 square miles.
Population: 73,032 (1940 census).
Location: West-central portion of State, bordering on Pacific Ocean.
County seat: Salinas.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XXI (Jan., 1925) : XXXI : XXXIV : XXXV.

Monterey County had eight different mineral substances during 1942, having a total value of $576,152, as compared with $419,372 for 1941.

In forty-first place, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Stone, Miscellaneous	----	$221,239
Unapportioned *	----	354,913
Total value		$576,152

* Includes diatomite, dolomite, gypsum, quicksilver, salt, sandstone.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

NAPA

Land area: 783 square miles.
Population: 28,503 (1940 census).
Location: Directly north of San Francisco Bay—one of the 'bay counties.'
County seat: Napa.
References: State Mineralogist Report XIV : XVII : XVIII : XX : XXV (April, 1929) : XXXV.

In 1942 the value of Napa County's mineral output was $1,447,638, placing it in thirtieth place on the list of counties, as compared with $1,019,184 for 1941.

With seven different mineral substances, commercial production for 1942 was as follows:

Substance	Amount	Value
Mineral water	41,312 gals.	$4,890
Unapportioned *	-----	1,442,748
Total value		$1,447,638

* Includes asbestos, pumice, quicksilver, sandstone, miscellaneous stone.

NEVADA

Land area: 974 square miles.
Population: 19,283 (1940 census).
Location: North of Lake Tahoe on the eastern border of the State.
County seat: Nevada City.
References: State Mineralogist Report XVI : XVII : XVIII : XIX : XX : XXVI (April, 1930) : XXXI : XXXII : XXXV : XXXVII (July, 1941).

Nevada County, one of the mountain counties of California, for some years alternated with Amador in the gold lead, but both were passed by Yuba in 1918-1921, also 1923. In 1922, 1924, 1929 to 1942, Nevada led all counties in gold output, though it held third place in 1925 and 1928, and second place in 1926 and 1927. Nevada County stands fourteenth on the list of counties in regard to value of its mineral output for 1942 with seven different mineral substances worth $5,956,238, as compared with $10,255,176 for 1941.

Commercial production for 1942 was as follows:

Substance	Amount	Value
Copper	13,299 lbs.	$1,609
Gold	161,593 fine ozs.	5,655,755
Lead	14,562 lbs.	970
Silver	300,963 fine ozs.	214,018
Unapportioned *	------	83,880
Total value		$5,956,238

* Includes barite, manganese ore, miscellaneous stone.

ORANGE

Land area: 795 square miles.
Population: 130,760 (1940 census).
Location: Southwest portion of the State, bordering Pacific Ocean.
County seat: Santa Ana.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XX : XXI (Jan., 1925) : XXXI : XXXV : XXXVII.

Generated on 2024-09-24 16:04 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Orange County, in third place as to value of mineral output for 1942, produced fourteen mineral substances, worth $27,508,497 compared with $19,399,481 in 1941.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Clay (pottery)	57,885 tons	$177,954
Gold	5 fine ozs.	175
Lead	9,286 lbs.	622
Natural gas	19,347,357 M. cu. ft.	1,293,338
Petroleum	24,122,716 bbls.	25,459,382
Silver	3,323 fine ozs.	2,363
Stone, Miscellaneous	------	543,143
Zinc	7,450 lbs.	693
Unapportioned *	------	30,827
Total value		$27,508,497

* Includes brick, copper, mineral water, salt, silica (quartz).

PLACER

Land area: 1395 square miles.
Population: 28,108 (1940 census).
Location: Eastern border of State directly west of Lake Tahoe.
County seat: Auburn.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XX : XXIII (July, 1937) : XXXI : XXXII (Jan., 1936).

Placer County, in thirty-first place, with twelve different mineral substances, had a commercial production for 1942 as follows, compared with $1,759,591 for the previous year:

Substance	*Amount*	*Value*
Clay (pottery)	137,565 tons	$175,922
Copper	7,600 lbs.	920
Gold	23,291 fine ozs.	815,185
Lead	23,559 lbs.	1,579
Silver	31,511 fine ozs.	22,408
Stone, Miscellaneous	------	70,782
Unapportioned *	------	248,246
Total value		$1,335,031

* Includes asbestos, brick, chromite, granite, mineral water.

PLUMAS

Land area: 2594 square miles.
Population: 11,548 (1940 census).
Location: Northeastern border of State, south of Lassen County.
County seat: Quincy.
References: State Mineralogist Report XVI : XVII : XVIII : XIX : XX : XXIV (Oct., 1928) : XXIX : XXX : XXXIII (April, 1937), XXXVII.

Plumas County's mineral output for 1942 with seven different mineral substances was valued at $346,936, as compared with $2,370,901 in 1941.

In forty-fifth place, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	8,165 fine ozs.	$285,775
Silver	959 fine ozs.	682
Stone, Miscellaneous	----	14,300
Unapportioned *	----	46,179
Total value		$346,936

* Includes chromite, copper, lead, manganese ore.

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

RIVERSIDE

Land area: 7240 square miles.
Population: 105,524 (1940 census).
Location: Southern portion of State.
County seat: Riverside.
References: State Mineralogist Report XV : XVII : XVIII : XX : XXV (Oct., 1929) : XXX : XXXI : XXXIV-XXXVII, (inc.).

Riverside is the fourth county in the State in size and the twelfth in regard to the total value of mineral output for 1942. Within its borders are included mountains, desert, and agricultural land. In point of variety Riverside County showed sixteen different mineral substances commercially produced in 1942 with a total value of $7,271,099, as compared with the 1941 output which was valued at $6,351,012.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Clay (pottery)	148,887 tons	$308,535
Gold	348 fine ozs.	12,180
Silver	181 fine ozs.	129
Stone, Miscellaneous	----	1,266,888
Unapportioned *	----	5,683,367
Total value		$7,271,099

* Includes brick, cement, copper, dolomite, granite, gypsum, limestone, manganese ore, mineral water, silica (glass sand), tungsten ore.

SACRAMENTO

Land area: 983 square miles.
Population: 170,333 (1940 census).
Location: North-central portion of State.
County seat: Sacramento.
References: State Mineralogist Report XV : XVII : XVIII : XX : XXI (Jan., 1925) : XXXI.

Sacramento stands ninth among the counties of the State as a mineral producer; the output for 1942 being valued at $9,884,746, as compared with the 1941 production worth $7,484,001. In regard to gold output alone, this county ranks second, being exceeded by Nevada, the Sacramento product coming from the dredges. With ten different mineral substances, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	125,120 fine ozs.	$4,379,200
Natural gas	49,172,104 M. cu. ft.	3,937,671
Silver	6,387 fine ozs.	4,542
Stone, Miscellaneous	------	1,425,785
Unapportioned *	------	137,548
Total value		$9,884,746

* Includes brick and hollow tile, clay (pottery), granite, paving blocks, platinum.

SAN BENITO

Land area: 1392 square miles.
Population: 11,392 (1940 census).
Location: West-central portion of State.
County seat: Hollister.
References: State Mineralogist Report XV : XVII : XVIII : XX : XXII (April, 1926) : XXXIV : XXXV.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

San Benito County ranked twentieth among the counties in regard to the value of total mining production for 1942, having an output worth $3,104,054, as compared with $1,988, 205 for the previous year.

Commercial output for 1942 included antimony ore, cement, dolomite, quicksilver, sand, gravel, and crushed rock.

SAN BERNARDINO

Land area: 20,157 square miles.
Population: 161,108 (1940 census).
Location: Southeastern portion of State.
County seat: San Bernardino.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XXVI (July, 1930) : XXVII (July, 1931) : XXX : XXXIV-XXXVIII (inc.) : XXXIX (Oct., 1943).

San Bernardino, by far the largest county in the State in area, ranked fifth in regard to the value of mineral output for 1942, with a total of $24,638,661, as compared with $16,953,033, the total for 1941.

San Bernardino, for several years (except for 1918) had led all other counties in the State in point of variety of minerals, producing commercially in 1942 a total of thirty-three different substances.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Bentonite	5,032 tons	$48,351
Clay (pottery)	4,759 tons	32,224
Copper	157,195 lbs.	19,021
Gold	9,665 fine ozs.	338,275
Lead	59,498 lbs.	3,986
Limestone	57,678 tons	148,530
Salt	156,181 tons	473,760
Talc	17,894 tons	185,709
Soda (soda ash and salt cake)	239,941 tons	2,631,557
Silver	65,717 fine ozs.	46,732
Stone, Miscellaneous	-----	2,075,901
Zinc	579,111 lbs.	53,857
Unapportioned *	-----	18,580,756
Total value		$24,638,661

* Includes antimony, borates, brick, bromine, calcium chloride, cement, feldspar, gems, granite, iron ore, lithia salts, manganese ore, mineral paint, mineral water, potash, petroleum, sandstone, silica (quartz) not including gannister, strontium, tungsten ore.

SAN DIEGO

Land area: 4221 square miles.
Population: 289,348 (1940 census).
Location: Extreme southwest corner of State.
County seat: San Diego.
References: State Mineralogist Report XIV : XVII : XVIII : XIX : XX : XXI (July, 1925) : XXX : XXXV (Jan., 1939) : XXXVI-XXXVII.

San Diego ranked thirty-fourth in the total value of its mineral output for the year 1942 with fifteen different mineral substances on the commercial list. The value for 1942 was $1,188,661, as compared with the 1941 output worth $1,411,934.

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Commercial production for 1942 was as follows:

Substance	Amount	Value
Clay (pottery)	9,902 tons	$12,266
Gold	7 fine ozs.	245
Silver	3 fine ozs.	2
Stone, Miscellaneous	----	821,816
Unapportioned *	----	604,571
Total value		$1,188,661

* Includes bentonite, brick and hollow tile, bromine, feldspar, granite, magnesium chloride, mineral water, salt, silica (quartz), tube mill pebbles.

SAN FRANCISCO

Land area: 46½ square miles.
Population: 634,536 (1940 census).
County seat: San Francisco.
References: State Mineralogist Report XVII : XVIII : XX : XXV (April, 1929) : XXXV : XXXVII.

Surprising as it may appear at first glance, San Francisco County is listed among the mineral-producing sections of the State, actual production consisting mainly of crushed rock, sand, gravel, mineral water and gold and silver from beach sands.

In fifty-first place, commercial production for 1942 had a total value of $110,140 and was miscellaneous stone and gold.

SAN JOAQUIN

Land area: 1448 square miles.
Population: 134,207 (1940 census).
Location: Central portion of State.
County seat: Stockton.
References: State Mineralogist Report XIV : XVII : XVIII : XXI (April, 1925).

San Joaquin County reported a mineral production for 1942 having a total value of $2,079,078, as compared with $1,832,622 for 1941.

In twenty-fifth place, commercial production for 1942 was as follows:

Substance	Amount	Value
Clay (pottery)	1,894 tons	$4,782
Gold	18,103 fine ozs.	633,605
Natural gas	11,829,675 M. cu. ft.	839,502
Silver	1,762 fine ozs.	1,253
Stone, Miscellaneous	------	475,030
Unapportioned *	------	124,906
Total value		$2,079,078

* Includes brick and hollow tile, manganese ore, platinum.

SAN LUIS OBISPO

Land area: 3334 square miles.
Population: 33,246 (1940 census).
Location: Bordered by Kern County on the east and the Pacific Ocean on the west.
County seat: San Luis Obispo.
References: State Mineralogist Report XV : XVII : XVIII : XXI (Oct., 1925) : XXXI (Oct., 1935) : XXXV : XXXVII.

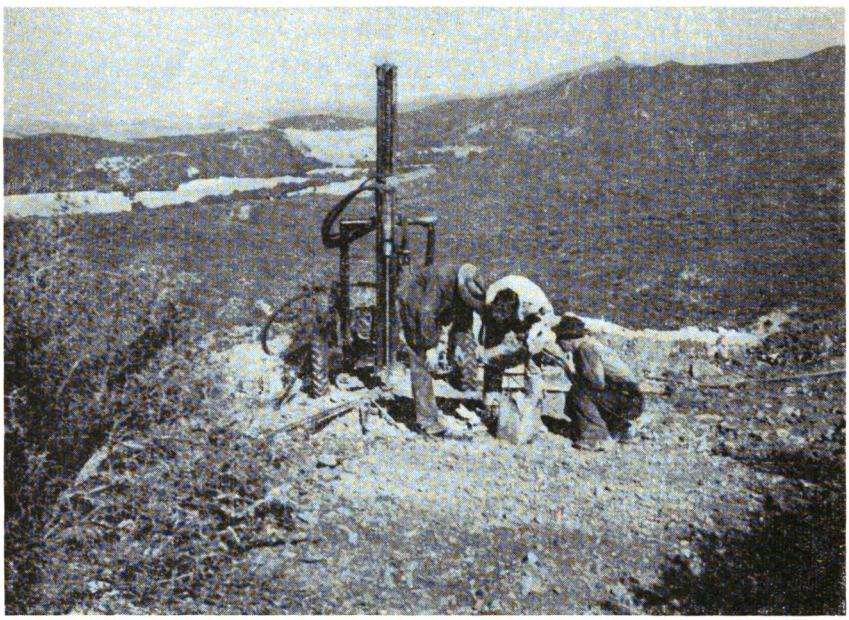
Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

The total value of the mineral production of San Luis Obispo County in 1942, with thirteen different mineral substances, was $1,031,114, as compared with $572,025 in 1941.

In thirty-sixth place, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	4 fine ozs.	$140
Stone, Miscellaneous	--	212,255
Unapportioned *	--	818,719
Total value		$1,031,114

* Includes brick and hollow building tile, chromite, limestone, manganese ore, marble, mineral water, volcanic ash, petroleum, quicksilver, sandstone.



Panning drill cuttings, prospecting chromite ore-body at Castro Mine, near San Luis Obispo, San Luis Obispo County. Photo by Walter W. Bradley

SAN MATEO

Land area: 447 square miles.
Population: 111,782 (1942 census).
Location: Peninsula, adjoined by San Francisco on the north.
County seat: Redwood City.
References: State Mineralogist Report XVII : XVIII : XXV (April, 1929) : XXIX : XXXV.

San Mateo County had a mineral output in 1942 of five different substances, having a total value of $3,874,496, as compared with $3,425,263, the value for 1941.

In seventeenth place, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Stone, Miscellaneous	----	$109,901
Unapportioned *	----	3,764,595
Total value		$3,874,496

* Includes cement, limestone (shells), magnesium salts.

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

SANTA BARBARA

Land area: 2740 square miles.
Population: 70,555 (1940 census).
Location: Southwestern portion of State, adjoining San Luis Obispo on the south.
County seat: Santa Barbara.
References: State Mineralogist Report XV : XVII : XVIII : XIX : XXI (Oct., 1925) : XXXII : XXXV.

Santa Barbara County owes its position of eighth place in the State in regard to its mineral output to the presence of productive oil fields within its boundaries. The total value of its mineral production during the year 1942 was $11,415,045, as compared with $10,018,726, the output for 1941.

With twelve different substances, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Natural gas	2,663,010 M. cu. ft.	$224,275
Petroleum	13,267,311 bbls.	9,407,096
Stone, Miscellaneous	------	155,360
Unapportioned *	------	1,628,314
Total value		$11,415,045

* Includes bituminous rock, brick, clay (pottery), diatomite, copper, gold, quicksilver, silver.

SANTA CLARA

Land area: 1328 square miles.
Population: 174,949 (1940 census).
Location: West-central portion of State.
County seat: San Jose.
References: State Mineralogist Report XVII : XVIII : XX : XXVI (Jan., 1930) : XXIX : XXXV.

Santa Clara County reported a mineral output for 1942 of $9,204,217, as compared with $5,832,076, the figure for 1941.

In tenth place with ten mineral substances, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Stone, Miscellaneous	----	$283,789
Unapportioned *	----	8,920,428
Total value		$9,204,217

* Includes brick, cement, clay (pottery), limestone (shells), magnesite, manganese ore, petroleum, quicksilver.

SANTA CRUZ

Land area: 435 square miles.
Population: 45,057 (1940 census).
Location: Bordering Pacific Ocean, just south of San Mateo County.
County seat: Santa Cruz.
References: State Mineralogist Report XVII : XVIII : XXII (Jan., 1926) : XXIX.

The mineral output of Santa Cruz County amounted to a total of $3,506,972 for 1942, giving the county a standing of eighteenth among all others in the State in this regard. The 1941 figure was $3,206,828.

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Stone, Miscellaneous	----	$162,588
Unapportioned *	----	3,344,384
Total value		$3,506,972

* Includes bituminous rock, cement, limestone.

SHASTA

Land area: 3858 square miles.
Population: 28,800 (1940 census).
Location: North-central portion of State.
County seat: Redding.
References: State Mineralogist Report XIV : XVII : XVIII : XIX : XXII (April, 1926) : XXIX (Jan., April, 1933) : XXX : XXXIV : XXXV (April, 1939) : XXXVI.

Shasta County stood sixteenth in California among the mineral-producing counties in 1942, with an output valued at $4,025,223, as compared with the 1941 production worth $3,758,848.

With twelve different mineral substances, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Stone, Miscellaneous	----	$2,581,053
Unapportioned *	----	1,444,170
Total value		$4,025,223

* Includes asbestos, chromite, copper, gold, iron ore, lead, mineral water, pyrite, sandstone, silver.

SIERRA

Land area: 923 square miles.
Population: 3025 (1940 census).
Location: Eastern border of State just north of Nevada County.
County seat: Downieville.
References: State Mineralogist Report XVI : XVII : XVIII : XX : XXV (April, 1929) : XXXI, XXXVIII (Jan., 1942).

Sierra County reported a mineral production of $640,895 in 1942, which was mainly gold, as compared with the 1941 output, worth $964,347.

In thirty-ninth place, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	18,030 fine ozs.	$631,050
Silver	2,631 fine ozs.	1,871
Unapportioned *	-----	7,974
Total value		$640,895

* Includes miscellaneous stone, chromite.

SISKIYOU

Land area: 6256 square miles.
Population: 28,598 (1940 census).
Location: Extreme north-central portion of State, next to Oregon boundary.
County seat: Yreka.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

References: State Mineralogist Report XIV : XVII : XVIII : XIX : XX : XXI (Oct., 1925) : XXVIII (Jan., 1931) : XXIX : XXX : XXXI (July, 1935) : XXXIV : XXXV : XXXVII.

Siskiyou, fifth county in California in regard to size, located in highly mineralized and mountainous country, ranks twenty-eighth in regard to mineral output with twelve mineral substances for 1942. The 1941 production was valued at $2,578,213.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Copper	7,668 lbs.	$928
Gold	38,758 fine ozs.	1,356,530
Silver	5,888 fine ozs.	4,187
Stone, Miscellaneous	----	105,952
Unapportioned *	----	152,917
Total value		$1,620,514

* Includes chromite, lead, gems, mineral water, pumice, quicksilver, platinum.

SOLANO

Land area: 822 square miles.
Population: 49,118 (1940 census).
Location: Touching San Francisco Bay on the northeast.
County seat: Fairfield.
References: State Mineralogist Report XIV : XVII : XXIII (April, 1927) : XXXV.

Solano, while mostly valley land, produced mineral substances during 1942 to the total value of $2,720,428, ranking it twenty-second place among the counties of the State, compared with the 1941 output worth $1,141,335.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Natural gas	29,691,001 M. cu. ft.	$2,622,523
Stone, Miscellaneous	------	97,500
Other minerals	------	405
Total value		$2,720,428

SONOMA

Land area: 1577 square miles.
Population: 69,052 (1940 census).
Location: South of Mendocino County, bordering on the Pacific Ocean.
County seat: Santa Rosa.
References: State Mineralogist Report XIV : XVII : XVIII : XXII (July, 1926) : XXXV.

Sonoma County ranked twenty-seventh among the counties of California during 1942 with a mineral output valued at $1,655,326 compared with $1,187,406, the 1941 figure.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Mineral water	80,697 gals.	$16,603
Stone, Miscellaneous	----	842,512
Unapportioned *	----	796,211
Total value		$1,605,326

* Includes granite (volcanic tuff), manganese ore, quicksilver, natural gas.

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

STANISLAUS

Land area: 1450 square miles.
Population: 74,866 (1940 census).
Location: Center of State, bounded on south by Merced County.
County seat: Modesto.
References: State Mineralogist Report XIV : XVII : XVIII : XXI (April, 1925) : XXXV.

Gold has usually been the chief mineral product of Stanislaus County, but it was exceeded in 1918-1919 by manganese, and in 1921-1923 and 1925-1930 by miscellaneous stone. This county for 1942 ranked twenty-ninth in the State in regard to minerals, with an output valued at $1,475,362, as compared with $1,325,932 in 1941.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	27,795 fine ozs.	$972,825
Silver	2,544 fine ozs.	1,809
Stone, Miscellaneous	----	222,241
Unapportioned *	----	278,487
Total value		$1,475,362

* Includes clay (pottery), magnesite, manganese ore, mineral paint, quicksilver, platinum, natural gas.

SUTTER

Land area: 608 square miles.
Population: 18,680 (1940 census).
Location: Bounded by Butte County on the north and Sacramento on the south.
County seat: Yuba City.
References: State Mineralogist Report XV : XVII : XVIII.

Sutter is one of only two counties in the State which for a number of years reported no commercial output of some kind of mineral substance. In 1917 some crushed rock was taken out, from the Marysville Buttes, also in 1925-1928, and 1937-1938.

There has been some utilization of natural gas and clay. Coal is found here, but no deposits of it have been placed on a productive basis.

During 1942 there was a commercial output of pottery clay and natural gas, having a total value of $95,438, which ranked it fifty-second as a mineral-producing county. The 1941 total was $121,848.

TEHAMA

Land area: 2893 miles.
Population: 14,316 (1940 census).
Location: North-central portion of the State, bounded on the north by Shasta.
County seat: Red Bluff.
References: State Mineralogist Report XV : XVII : XVIII : XIV : XXIV (July, 1928) : XXXVII.

Tehama County stood fifty-second among the mineral-producing counties of the State for 1942, with an output valued at $47,533, compared with $2,295 in 1941. Commercial production in 1942 was chromite, crushed rock, sand and gravel.

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

TRINITY

Land area: 3166 square miles.
Population: 3970 (1940 census).
Location: Northwestern portion of State.
County seat: Weaverville.
References: State Mineralogist Report XIV : XVII : XVIII : XIX : XX : XXII (Jan., 1926) : XXIX (Jan., April, 1933) : XXX : XXXIV : XXXV : XXXVII (Jan., 1941).

Trinity County's output of minerals was valued at $1,053,442 for 1942, as compared with the 1941 figure of $1,556,365, mainly due to gold which gives the county a rank of thirty-fifth for the year.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	24,197 fine ozs.	$846,895
Silver	2,814 fine ozs.	2,001
Stone, Miscellaneous	----	30,885
Unapportioned *	----	173,661
Total value		$1,053,442

* Includes chromite, copper, lead, iron ore, manganese ore, quicksilver, platinum.

TULARE

Land area: 4856 square miles.
Population: 107,152 (1940 census).
Location: Bounded by Inyo on the east, Kern on the south, Fresno on the north.
County seat: Visalia.
References: State Mineralogist Report XV : XVII : XVIII : XX : XXXVI : XXXVII.

Tulare County stands forty-eighth on the list of mineral-producing counties for 1942, with eight different mineral substances, having a total value of $168,743, as compared with $272,661 for 1941.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	134 fine ozs.	$4,690
Silver	57 fine ozs.	41
Stone, Miscellaneous	--	30,298
Unapportioned *	--	133,714
Total value		$168,743

* Includes brick and hollow tile, manganese ore, natural gas, petroleum, tungsten ore.

TUOLUMNE

Land area: 2190 square miles.
Population: 10,887 (1940 census).
Location: East-central portion of State—Mother Lode District.
County seat: Sonora.
References: State Mineralogist Report XIV : XVII : XVIII : XIX : XX : XXIV (Jan., 1928) : XXXIV : XXXV : XXXVII.

Tuolumne County ranks thirty-seventh among the counties of the State relative to its total value of mineral output for 1942, with eight different substances. This county ranked first as a producer of marble in the State. The mineral production for 1942 was valued at $854,080, as compared with $1,142,905 for 1941.

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Copper	4,555 lbs.	$551
Gold	12,673 fine ozs.	443,555
Silver	3,621 fine ozs.	2,575
Stone, Miscellaneous	----	110,390
Unapportioned *	----	289,509
Total value		$854,080

* Includes chromite, dolomite, limestone, tungsten ore.

VENTURA

Land area: 1878 square miles.
Population: 69,685 (1940 census).
Location: Southwestern portion of State, bordering on Pacific Ocean.
County seat: Ventura.
References: State Mineralogist Report XV : XVII : XVIII : XX : XXI : XXVIII (July-Oct., 1932) : XXXVII.

Ventura is sixth in the State in respect to the value of its mineral output for 1942. The 1942 mineral production was worth $23,084,373 as compared with the 1941 output valued at $21,430,061.

With eight different mineral substances, commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Natural gas	37,911,597 M. cu. ft.	$2,180,252
Petroleum	17,853,644 bbls.	20,148,305
Stone, Miscellaneous	------	565,218
Unapportioned *	------	190,598
Total value		$23,084,373

* Includes clay (oil well drilling), granite (volcanic tuff), gypsum, limestone.

YOLO

Land area: 1017 square miles.
Population: 27,243 (1940 census).
Location: Sacramento Valley, bounded by Sutter on the east and Colusa on the north.
County seat: Woodland.
References: State Mineralogist Report XIV : XVII : XVIII : XXXV.

Yolo County, in fortieth place, had a commercial production for 1942 as follows, compared with $281,303 the preceding year:

Substance	*Amount*	*Value*
Stone, Miscellaneous	----	$150,066
Unapportioned *	----	467,352
Total value		$617,418

* Includes natural gas and quicksilver.

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

YUBA

Land area: 639 square miles.
Population: 17,034 (1940 census).
Location: Lies west of Sierra and Nevada counties; south of Plumas.
County seat: Marysville.
References: State Mineralogist Report XV : XVII : XVIII : XX : XXVI (July, 1930) : XXXI.

Yuba County ranked nineteenth among the counties of the State as a mineral producer and third in respect to gold, which is obtained mainly by dredges. The 1941 output was valued at $3,265,986.

Commercial production for 1942 was as follows:

Substance	*Amount*	*Value*
Gold	75,595 fine ozs.	$2,645,825
Silver	5,101 fine ozs.	3,627
Stone, Miscellaneous	----	589,034
Other minerals	----	6,285
Total value		$3,244,771

Generated on 2024-09-24 16:03 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Original from
THE OHIO STATE UNIVERSITY

CHAPTER EIGHT

DIRECTORY OF PRODUCERS OF METALLIC AND NON-METALLIC MINERALS IN CALIFORNIA 1942

NOTE.—The producers of natural gas and petroleum will be found in the quarterly Summary of Operations, California Oil Fields, for July to December, 1942 (Vol. 28, No. 2).

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Original from
THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

ANTIMONY

Operator	Address	Location of mine
Inyo County		
Bishop Antimony Mining Co., c/o R. S. Beatty, Jr.	P.O. Box 326, Bishop	Bishop
Darwin Antimony #1, James B. Utt	514½ N. Main St., Santa Ana	Darwin
San Benito County		
Station Mine, R. B. Knox (owner)	Hollister	Hollister

ASBESTOS

Operator	Product	Address	Location of mine
Napa County			
Kohler & Chase	a	26 O'Farrell St., San Francisco	Steel Canyon
Placer County			
S. G. Bowman	b	Forest Hill	Forest Hill
Shasta County			
Powhaton Mining Co.	b	Woodlawn, Baltimore, Md.	Hazel Creek

a. Chrysotile short fiber. b. Tremolite.

BARYTES

Operator	Address	Location of mine
Mariposa County		
Baroid Sales Division, National Lead Co.	830 Ducommun St., Los Angeles	El Portal
Nevada County		
Industrial Minerals & Chemical Co., Spanish Mine	836 Gilman St., Berkeley	Washington

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

BENTONITE (FULLER'S EARTH)

Operator	Address	Location of pit
Inyo County		
Kennedy Minerals Co.	2550 E. Olympic Blvd., Los Angeles	Olancha
Muroc Clay Co.	5525 Randolph St., Maywood	Olancha
Kern County		
Muroc Clay Co.	5525 Randolph St., Maywood	Muroc
San Bernardino County		
Baroid Sales Division, National Lead Co.	830 Ducommun St., Los Angeles	Hector
Kennedy Minerals Co.	2550 E. Olympic Blvd., Los Angeles	
Pacific Bentonite Mine, Louis Martinez	Box 374, Red Mountain	Red Mountain
F. E. Schundler & Co., Inc., Eyrite Mine	504 Railroad St., Joliet, Ill.	Barstow
San Diego County		
Standard Oil Co. of Calif.	Standard Oil Bldg., San Francisco	Palm Siding

BITUMINOUS ROCK

Operator	Address	Location of mine
Santa Barbara County		
Higgins Quarry, D. A. Sattler, Lessee	856 Arguello Rd., Santa Barbara	Carpinteria
Santa Cruz County		
Calrock Asphalt Co.	525 Market St., San Francisco	Majors

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

BORATES

Operator	Address	Location of property
Inyo County		
Pacific Alkali Co.	1209 Pacific Mutual Bldg., Los Angeles	Bartlett
United States Borax Co.	510 W. 6th St., Los Angeles	Death Valley
Kern County		
Pacific Coast Borax Co.	510 W. 6th St., Los Angeles	Kramer
San Bernardino County		
American Potash and Chemical Corp.	Trona	Trona
West End Chemical Co.	Latham Square Bldg., Oakland	West End

BROMINE

Operator	Address	Location of property
Alameda County		
Westvaco Chlorine Prod. Corp.	405 Lexington Ave., New York, N. Y.	Newark
San Bernardino County		
American Potash & Chem. Co.	Trona	Trona
San Diego County		
Westvaco Chlorine Prod. Corp.	405 Lexington Ave., New York, N. Y.	San Diego

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

CALCIUM CHLORIDE

Operator	Address	Location of mine
Imperial County		
Mullet Island Salt Works	Niland	Niland
San Bernardino County		
California Rock Salt Co.	2465 Hunter St., Los Angeles	Amboy

CALCIUM SILICATE

Kern County		
Johns-Manville Product Corp.	Box 198, Long Beach	Code

CARBON DIOXIDE GAS

Operator	Address	Location of wells
Imperial County		
National Dry Ice Co.	1225 E. 8th St., Los Angeles	Niland
Natural Carbonic Prod., Inc.	748 E. Washington Blvd., Los Angeles	Niland
Mendocino County		
Caldri Ice Corp.	1168 Battery St., San Francisco	Hopland

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

CEMENT

Operator	Address	Location of mill
Calaveras County		
Calaveras Cement Co.	315 Montgomery St., San Francisco	San Andreas
Contra Costa County		
Henry Cowell Lime and Cement Co.	2 Market St., San Francisco	Cowell
Kern County		
Monolith Portland Cement Co.	Bartlett Bldg., Los Angeles	Monolith
Los Angeles County		
Blue Diamond Corp.	1650 S. Alameda St., Los Angeles	Los Angeles
Merced County		
Yosemite Portland Cement Co.	Merced	Merced
Riverside County		
Riverside Cement Co.	621 S. Hope St., Los Angeles	Riverside
San Benito County		
Pacific Portland Cement Co.	417 Montgomery St., San Francisco	San Juan
San Bernardino County		
California Portland Cement Co.	601 W. Fifth St., Los Angeles	Colton
Southwestern Portland Cement Co.	503 Roosevelt Bldg., Los Angeles	Victorville
San Mateo County		
Pacific Portland Cement Co.	417 Montgomery St., San Francisco	Redwood City
Santa Clara County		
The Permanente Corp.	Box 29, San Jose	Permanente
Santa Cruz County		
Santa Cruz Portland Cement Co.	Crocker Bldg., San Francisco	Davenport

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

CHROMITE

Operator	Address	Location of mine
Del Norte County		
Chas. H. Bennett	Crescent City	Crescent City
Clifford Johnson, Bonanza Chrome Mine	O'Brien, Ore.	Crescent City
Crescent Pacific Mining Co.	503 Market St., San Francisco	Crescent City
Doe Creek Mine, J. B. Isgrid & G. P. Lilley	Box 352, Crescent City	Crescent City
French Hill Mine, C. H. McClendon	Crescent City	Crescent City
W. E. & E. R. Gilmore	Syms Camp, via Crescent City	Syms Camp
High Plateau Group, Eugene R. Brown	O'Brien, Ore.	Crescent City
Pacific Chrome & Manganese Syndicate	667 Mission St., San Francisco	Crescent City
J. K. Remsen	P.O. Box 347, Grants Pass, Ore.	Crescent City
Tyson Chrome Mines, Ltd.	406 Montgomery St., San Francisco	Crescent City
El Dorado County		
Black Oak Chrome Mine, Russell J. Wilson	Midpines	Garden Valley
Pilliken Mine, Rustless Mining Corp.*	Farmers & Mechanics Bldg., Sacramento	Folsom
Pilliken Mine, United States Chrome Mines, Inc., A. H. Wild	Russ Bldg., San Francisco	Folsom
Volo Mining Co.	P.O. Box 586, Placerville	Placerville
Fresno County		
Clara H. Chrome Mines	Box 57, Clovis	Watts Valley
Glenn County		
Grey Eagle Mine, Rustless Mining Corp.	Farmers & Mechanics Bldg., Sacramento	Willows
Humboldt County		
Dorothea Reddy Moroney	Hamberg	Orleans
Mosquito Lake Mine, L. O. Wilder, Sr.	Orleans	Orleans
Mendocino County		
Ray F. Helmke	Alderpoint	Longvale
Placer County		
W. L. Braden	430 Vernon St., Roseville	Colfax
Bruce McCollum	1444 Franklin St., Oakland	Colfax
Sun Set Chrome Mine, C. L. Matthews	Forest Hill	Forest Hill
Victory Chrome, Chas. H. Brown	Box 326, Auburn	Colfax
War Metals Development, Ltd.	615 Capital National Bank Bldg., Sacramento	Forest Hill
Plumas County		
Plumas Manganese & Chrome Co.	Quincy	Quincy
White Pine Mine, E. R. Patterson	Oakley	Quincy

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

San Luis Obispo County		
Castro Chrome Associates	232 Montgomery St., San Francisco	San Luis Obispo
Sweetwater Chrome Mine, A. H. Wild	Russ Bldg., San Francisco	Morro Rock
Shasta County		
Coggins Mine, J. K. Remsen	Box 347, Grants Pass, Ore.	Castella
Little Castle Creek Chrome Mine, Manley M. Brown	Dunsmuir	Dunsmuir
Montrose Mining & Milling Co.	Russ Bldg., San Francisco	Castella
Round Bottom Chrome Mine, J. O. Enberg	Russ Bldg., San Francisco	
Siskiyou County		
John Baldwin	P.O. Box 294, Yreka	Cecilville
O. W. Costello	Yreka	
Fairview Chrome Mine, H. E. Ellickson	640 Lane St., Yreka	Hamburg
Haden & Stone	Callahan	Callahan
Lambert Chrome Mine, Basil Wild	Box 66, Fort Jones	Fort Jones
Taylor & Munko	711 Florence St., Dunsmuir	Dunsmuir
Tehama County		
McLaughlin & Applegarth	3001 Russ Bldg., San Francisco	Red Bluff
Trinity County		
Crow Creek Chrome Mine, A. H. Wild	558 Russ Bldg., San Francisco	Castella
John Diestelhorst, Jr.	1078 West St., Redding	Wildwood
Shasta Lilly Claim, Philip Munko	Castella	Castella
Seagraves Chrome Mine, Harry Moore & H. Robinson	Platina	Platina
Sunny Slope Mine, Joe Shafter	Knob	Knob
Yellow Pine Chrome Mine, Knowles & Winters	P.O. Box 261, Redding	Indian Valley
Tuolumne County		
Stuart & Everhart	707 Bank of America Bldg., Stockton	Jamestown

* Returned property to United States Chrome Mines, Inc., in Sept. 1942.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

CLAY

(Including producers of crude clay; and manufacturers of brick, tile, porcelain, etc.)

Operator	Remarks	Address	Location of plant or pit
Alameda County			
California Pottery Co.	a, c	Niles	Niles
N. Clark & Sons	a, b	401 Pacific Ave., Alameda	Alameda
Kraftile Co.	a, b, c	Niles	Niles
M & S Tile Co.	a, c	Decoto	Decoto
Merritt Supply Co.	a	1289 Cedar St., Berkeley	Berkeley
Tesla Clay Sand Co.	c, f	503 Mills Bldg., San Francisco	Tesla
Westinghouse Elec. & Mfg. Co., Emeryville Porcelain Work	a	62d and Green Sts., Emeryville	Emeryville
Amador County			
M. J. Bacon	c	Ione	Carbondale
Cal. Mineral Products Co., Ione Clay and Sand Pit	c, f	Kohl Bldg., San Francisco	Ione
N. Clark & Sons	c	401 Pacific Ave., Alameda	Ione
Clay Corp. of California	c	1275 Harrison St., San Francisco	Ione
Ione Fire Brick Co., J. T. Roberts, Mgr.	b, c	1267 Russ Bldg., San Francisco	Ione
Butte County			
Gladding Bros. Mfg. Co.	c	S. 3d and Keys Sts., San Jose	Oroville
Calaveras County			
California Pottery Co.	c	Niles	Valley Springs
Contra Costa County			
American Radiator & Standard Sanitary Mfg. Co., H. W. Creeger, Mgr.	a	Box W., Richmond	Richmond
Port Costa Brick Works, C. G. Berg, Pres.	b	6th and Berry Sts., San Francisco	Port Costa
Stockton Fire Brick Co.	a, b	Russ Bldg., San Francisco	Pittsburg
Technical Porcelain & China Ware Co.	a	Manila and Kearney Sts., El Cerrito	El Cerrito
United Materials & Richmond Brick Co., Ltd.	a, b	Box 7, Richmond	Richmond
Fresno County			
Craycroft Brick Co.	a, b, c	Griffith-McKenzie Bldg., Fresno, R.F.D. 1, Box 6A	Fresno
Inyo County			
Kennedy Minerals Co.	e	2550 E. Olympic Blvd., Los Angeles	Olancha
Muroc Clay Co.	e	5525 Randolph St., Maywood	Olancha
Kern County			
American Minerals Co.	c	5601 S. Boyle, Los Angeles	Cantil
Antelope Mud Co.	d	Box 496, Avenal	Rosamond
Bakersfield Rock Co.	d	Box 395, Sta. A, Bakersfield	Bakersfield
Engstrand Elliott, Inc.	d	P.O. Box 132, Rosamond	Rosamond
McKittrick Mud Co., C. C. Sherpenburg	d	McKittrick	McKittrick
Mojave Corp.	d	Box 174, Los Nietos	Frazier Park
Muroc Clay Co.	e	5525 Randolph St., Maywood	Muroc

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Los Angeles County			
American Container Co., Inc.	a	3132 E. Pico Blvd., Los Angeles	Los Angeles
Angulo Tile Co., L. R. H. and W. H. Angulo	a, c	Reseda, Los Angeles County	Reseda
J. A. Bauer Pottery Co.	a	415 W. Ave. 33, Los Angeles	Los Angeles
J. Booth	a, c	1775 Stanford, Santa Monica	Santa Monica
Builders Brick Co., Ltd.	b	17602 S. Western Ave., Moneta	Moneta and Compton
California Clay Research Co.	d	Box 316, Rosamond	Lancaster
Coast Brick Co.	b	Box 326, Moneta	Torrance
H. F. Coors Co., Inc.	a	Inglewood	Inglewood
Davidson Brick Co.	b	4701 Floral Dr., Los Angeles	Los Angeles
Eljer California Co.	a	4100 Alameda, Los Angeles	Arcadia
Emsco Refractories Co.	a, b	5601 S. Boyle Ave., Vernon	Vernon
Gladding, McBean & Co., Tropico, L. A. & S. M. Plants	a, b, c	2901 Los Feliz Blvd., Los Angeles	Tropico, Los Angeles, Santa Monica, Hermosa Beach and Vernon
Higgins Brick & Tile Works	a, b, c	Box 525, Moneta	Moneta
Italian Terra Cotta Co.	a	1149 Mission Rd., Los Angeles	Los Angeles
Meyers Pottery Co.	a	2318 E. 52d St., Los Angeles	Los Angeles
Pacific Clay Products	a, b, c	Box 145, Sta. A, Los Angeles	Los Angeles and Los Nietos
Pomona Tile Mfg. Co.	a	629 N. La Brea Ave., Los Angeles	Pomona
Refractories Corp.	a, b	3363 Fruitland Rd., Vernon	Vernon
San Vallee Tile Kilns, R. F. Stubver, Mgr.	a, c	6601 Wilbur, Reseda	Reseda
Simons Brick Co., Walter R. Simons	a, b, c	1195 S. Boyle Ave., Los Angeles	Los Angeles
Star Brick Co.	b	Moneta	Moneta
Vernon Potteries	a	2300 E. 52d St., Los Angeles	Vernon
Vitrefrax Co.	a, b, c	5050 Pacific Blvd., Los Angeles	Los Angeles
Marin County			
McNear Brick Co.	a, c	McNear Point, San Rafael	McNear
Orange County			
El Toro Clay Co., I. P. Arnold	c, f	1846 W. 83d St., Los Angeles	El Toro
Gladding, MacBean & Co.	c	2901 Los Feliz Blvd., Los Angeles	Gypsum
La Bolsa Tile Co.	a, c	R.F.D. 1, Box 174, Huntington Beach	Smeltzer
Mission Clay Products Co.	a, b, c	Olive	Olive
Tierra Colorado Clay Co.	c	Box 441, San Juan Capistrano	San Juan Capistrano
Placer County			
Clay Corp. of Calif.	c	1275 Harrison St., San Francisco	Lincoln
Gladding, McBean & Co.	a, b, c	2901 Los Feliz Blvd., Los Angeles	Lincoln
Lincoln Clay Products Co.	c	Lincoln	Lincoln
Riverside County			
Alberhill Coal & Clay Co.	c	Box 4267, Village St., Los Angeles	Alberhill
Los Angeles Brick Co.	a, b, c	1078 Mission Rd., Los Angeles	Alberhill
Pacific Clay Products	c	Box 145, Sta. A, Los Angeles	Corona
Temescal Clay Co.	c	8601 Dorothy Ave., South Gate	Temescal

a. Clay products. b. Brick and hollow building-tile. c. Crude clay. d. Oil-well drilling-mud. e. Filtering clay. f. Fire sand.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

CLAY—1941—Continued

(Including producers of crude clay; and manufacturers of brick, tile, porcelain, etc.)

Operator	Remarks	Address	Location of plant or pit
Sacramento County			
Cannon & Co.	a, b, c	Box 802, Sacramento	Ben Ali
Gladding Bros. Mfg. Co.	c	S. 3rd and Keyes Sts., San Jose	Folsom
H. C. Muddox, Jessie E. Muddox, Owner	a	30th and L Sts., Sacramento	Sacramento
Panama Pottery Co.	a	R.F.D. 4, Box 1478, 24th St. Rd., Sacramento	Sacramento
Sacramento Brick Co.	b	1300 Front St., Sacramento	Sacramento
San Bernardino County			
Baroid Sales Div., National Lead Co.	d, e	830 Ducommun St., Los Angeles	Hector
Gladding, McBean & Co.	c	2901 Los Feliz Blvd., Los Angeles, Box 421	Hart
Hancock Brick Yard, C. P. Hancock & Son	b	Riverside	Highgrove
Kennedy Minerals Co.	c	2550 E. Olympic Blvd., Los Angeles	Colton
Pacific Bentonite Mine, Louis Martinez	e	Box 374, Red Mountain	Red Mountain
Southern California Minerals Co., W. K. Skeoch	c	320 S. Mission Rd., Los Angeles	Goff
Temescal Clay Co.	g	6801 Dorothy Ave., South Gate	Hicks
Velvet-White Co., B. N. Murphy	c	Box 389, Burbank	Oro Grande
San Diego County			
Bay View Fuel Co.	c	10983 Colver Ave., Linwood	San Diego
Pacific Clay Products Co.	c	Box 145, Station A, Los Angeles	Farr Station
Standard Oil Co. of Calif.	e	Standard Oil Bldg., San Francisco	Palm Siding
Union Brick Co., J. W. Rice	b	3565 3d St., North San Diego	Rose Canyon
Vitrified Products Corp.	a, b, c	4570 Pacific Highway, San Diego	North San Diego
San Joaquin County			
Joaquin Potteries	a	McKinley Ave., Stockton	Stockton
Pacific Clay Products Co.	c	Box 145, Station A, Los Angeles	
San Joaquin Brick Co.	b	33 S. El Dorado St., Stockton	Stockton
Stockton Brick & Tile Co.	a, b, c	McKinley Ave., Stockton	Stockton
San Luis Obispo County			
San Luis Brick Works, Faulstick Bros.	b	San Luis Obispo	San Luis Obispo
San Mateo County			
Richmond Potteries, Inc.	a	Box 187, South San Francisco	South San Francisco
Santa Barbara County			
McNall Building Materials	a, b, c	208 N. Salsipuedes, Santa Barbara	Santa Barbara

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Santa Clara County			
Coyote Creek Clay Bed, L. R. Lenfest	c	400 Woster Ave., San Jose	San Jose
Garden City Pottery	a	560 N. 6th St., San Jose	San Jose
Gladding Bros. Mfg. Co.	a, b, c	S. 3d and Keyes Sts., San Jose	San Jose
Myers Ceramic Pottery, F. Hinz	a	Box 97, Santa Clara	Santa Clara
Remillard-Dandini Co.	b	569 3d St., Oakland	San Jose
Solon & Larkin	a	1881 S. 1st St., San Jose	San Jose
Stanislaus County			
Coopertown Clay Deposit, J. H. Hornsby	c	714 E. Jefferson St., Stockton	Coopertown
Lester Raggio	c	Knights Ferry	Knights Ferry
Sutter County			
Gladding, McBean & Co.	c	2901 Los Feliz Blvd., Los Angeles	Nicolaus
Tulare County			
San Joaquin Materials Co.	b	744 G St., Fresno	Exeter
Ventura County			
Shell Oil Co., Dent Clay Pit	d	Shell Bldg., San Francisco	Ventura

a. Clay products. b. Brick and hollow building-tile. c. Crude clay. d. Oil-well drilling-mud. e. Filtering clay. f. Fire sand.

COAL

Operator	Address	Location of mine
Amador County		
Buena Vista Coal Mine, G. E. Morrison	518 55th St., Oakland	Ione

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:59 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

COPPER

(Principal Copper Producers in California in 1942—not less than 10,000 pounds)

Mine	Operator	Address	Locality of mine
Calaveras County			
Keystone (Calaveras Copper)	Keystone Copper Company	Copperopolis	Copperopolis
Inyo County			
Columbia No. 2	Shoshone Mines, Inc.	Tecopa	Tecopa
Pine Creek	U. S. Vanadium Corp.	30 E. 42d St., New York, N. Y.	Bishop
Madera County			
Daulton	West Coast Production Co.	450 Jessie St., San Francisco	Raymond
Mariposa County			
Barrett	R. E. Nolander	Merced Falls	Hornitos
Nevada County			
Lava Cap	Lava Cap Gold Mining Corp.	Box 780, Nevada City	Nevada City
San Bernardino County			
Bagdad-Chase	Frank Royer	Red Mountain	Ludlow
Rio Vista (Ord Mountain)	H. J. Stevenson	Security Bldg., Los Angeles	Barstow
Santa Barbara County			
Tunnel	Antolini & Johnson	131 E. Gutierrez St., Santa Barbara	Santa Barbara
Shasta County			
Iron Mountain	The Mountain Copper Co., Ltd.	216 Pine St., San Francisco	Matheson

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

DIATOMITE (DIATOMACEOUS EARTH)

Operator	Address	Location of quarry or mine
Los Angeles County		
The Dicalite Co.	756 S. Broadway, Los Angeles	San Pedro
Monterey County		
Pacatome, Inc.	Bradley	Bradley
Santa Barbara County		
Johns-Manville Products Corp.	Lompoc	Lompoc
Lompoc Diatomite Co.	405 Montgomery St., San Francisco	Lompoc

DOLOMITE

Operator	Address	Location of quarry
Inyo County		
Inyo Marble Co.	726-732 E. 29th St., Los Angeles	Keeler
Los Angeles County		
W. F. Glasser, Inc.	713 N. Sepulveda, Brentwood Heights, Los Angeles	Bel-Air
Monterey County		
Bethlehem Steel Co., Sterling Ranch Quarry	20th and Illinois, San Francisco	Natividad
Permanente Metals Corp.	Permanente	Natividad
Riverside County		
Miller Bros. Trucking Co.	10424 Washington Ave., Southgate	Glenhaven
San Benito County		
Archie E. Hamilton	Hollister	Hollister
Tuolumne County		
U. S. Lime Products Corp.*	85 2d St., San Francisco	Sonora

* Output partly used in lime.

Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:04 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

FELDSPAR

Operator	Address	Location of mine
Fresno County		
W. H. Childer	Box 671, Fresno	Friant
San Bernardino County		
Gladding, McBean & Co.	2901 Los Feliz Blvd., Los Angeles	
San Diego County		
American Radiator & Standard Sanitary Corp., D. D. Fleming, Mgr.	Campo	Campo

GEMS AND JEWELERS' MATERIALS

Operator	Variety	Address
W. C. Eyles	Californite, moss agate	749 W. A St., Hayward
Wm. Grove	Iceland-spar	Cedarville
H. F. Heather	Iceland-spar	236 Oak Knoll Ave., Pasadena

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Principal gold producers in California out of a total of 862 placer operators and lode mines in 1942.

Mine	Type of mine	Operator	Address	Postoffice of mine
Amador County				
Argonaut	a	Argonaut Mining Co., Ltd.	Jackson	Jackson
Arkansas Creek Unit	k	Orolomo Co.	Box 569, Sacramento	Ione
Belden	a	Belama Corporation	1506 Wall St., Fort Wayne, Ind.	Pine Grove
Central and Old Eureka	a	Central Eureka Mining Co.	Sutter Creek	Sutter Creek
Delta Tailings Dump	c	Delta Placer Gold	564 Market St., San Francisco	Ione
Diebold Ranch	k	L. E. Pearson	444 Market St., San Francisco	Camanche
Elk Horn	a	Edward Schaefer	Pine Grove	Pine Grove
Garibaldi (Boardman)	h	Earnest L. Lilly	706 California Bldg., Stockton	Volcano
Horton	g	Alvah G. Ekel and Kreth Mines	Ione	Ione
Kennedy	a	Kennedy Mining & Milling Co.	519 California St., San Francisco	Martell
Keystone	a	Keystone Mine Syndicate	Amador City	Amador City
Lorentz Property	h	Long Bar Gold Dredging Co.	935 Forum Bldg., Sacramento	Plymouth
McCullough Property	h	Pacific Placers Engineering Co.	3400 H St., Sacramento	Ione
Orr, John, Property	h	Amador Dredging Co.	Sutter Creek	Plymouth
Plymouth Tailings	c	Argonaut Mining Co., Ltd.	Jackson	Plymouth
Rupley Ranch	k	John C. Pantle	Sutter Creek	Plymouth
Sutter Creek Unit	h	Amador Dredging Co.	Sutter Creek	Sutter Creek
Swingle Property	h	Mountain Gold Dredging Co., or C. R. Garibaldi	Amador City	Plymouth
Treble Clef	h	Earnest L. Lilly	706 California Bldg., Stockton	Ione
Wilson Property	h	Mountain Gold Dredging Co., or C. R. Garibaldi	Amador City	Plymouth
Butte County				
Amo	k	F. C. Peterson	Box 550, Oroville	Oroville
Boynton Property	h	Wm. Richter & Sons	Route 2, Box 400, Oroville	Oroville
Butte Unit	e	Yuba Consolidated Gold Fields	351 California St., San Francisco	Oroville
Dagorret Property	h	Placer Exploration Co.	256 Montgomery St., San Francisco	Oroville
Feather River Channel	h	Golden Feather Dredging Co.	Oroville	Oroville
Gianella Property	h	Placer Exploration Co., and Summar Dredging Co.	Oroville	Oroville
Haselbusch, etc.	e	Oroville Gold Dredging Co.	2052 Bird St., Oroville	Oroville
Innis Property	h	Placer Exploration Co.	256 Montgomery St., San Francisco	Oroville
Kister Property	e	Gold Hill Dredging Co.	311 California St., San Francisco	Oroville

a. Lode gold mine. b. Gold-silver mine. c. Tailings dumps. d. Pocket. e. Dredge (bucketline). f. Drift mine. g. Hydraulic mine. h. Dragline operations. j. Copper-gold mine. k. Power shovel or dryland dredge. m. Lead mine. n. Suction dredge.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

GOLD—Continued

Principal gold producers in California out of a total of 862 placer operators and lode mines in 1942.

Mine	Type of mine	Operator	Address	Postoffice of mine
Butte County—Continued				
Lemroh Dredge	h	Lemroh Mining Co.	2401 Bayshore Blvd., San Francisco	Oroville
Lancha Plana Dredge #5	e	Lancha Plana Gold Dredging Co.	Lockeford	Chico
Morris Ravine	f	Morris Ravine Mining Co.	Oroville	Oroville
Peter Property	h	Sunmar Dredging Co.	Oroville	Oroville
Placer Development Co., dredge	h	Placer Development Co.	2401 Bayshore Blvd., San Francisco	Oroville
Sunset	h	Piombo Bros. & Co.	1571 Turk St., San Francisco	Oroville
Surcease	a	Hoefling Bros.	Route 1, Oroville	Oroville
Wyandotte Property	h	Wm. Richter & Sons	Route 2, Box 44, Oroville	Oroville
Calaveras County				
Carson Hill	a	Carson Hill Gold Mining Corporation	Star Route Angels Camp	Melones
Cat Camp	k	Burson Mining Co.	2054 University Ave., Berkeley	Camanche
Easyz Bird	a	Le Roi Mines, Inc.	P.O. Box 905, Jackson	Jackson
Gnecco, Frank B., Property	h	Thurman & Wright	235 Montgomery St., San Francisco	San Andreas
Gold Mg. & Water Co., Property	k	Fire Protection Engineering Co.	369 Pine St., San Francisco	San Andreas
Lombardi Property	h	Thurman & Wright	235 Montgomery St., San Francisco	San Andreas
McGurk Property	h	Thurman & Wright	235 Montgomery St., San Francisco	San Andreas
Mountain King	a	El Gabilan Corporation	Copperopolis	Copperopolis
Robie Property	h	Horseshoe Dredging Co.	Milton	Jenny Lind
Royal	a	Frank S. Tower	Milton	Milton
Sheepranch	a	St. Joseph Lead Co.	Sheepranch	Sheepranch
Wallace	k	Ellard A. Bacon	303 Delmar Way, San Mateo	Wallace
Willits, W. C., Ranch	h	Stagan Mining Co.	Box 543, Valley Springs	Valley Springs
Wolhall Dredge	h	Wolhall Dredging Corporation	Natoma	Jenny Lind
El Dorado County				
Alhambra	a	Alhambra-Shumway Mines, Inc.	704 Helm Bldg., Fresno	Kelsey
Barkley Property	h	Greenhorn Dredging Co.	Youngs	Youngs
Big Canyon Dredge	h	Big Canyon Dredge	Box 649, Fresno	Folsom
Dredge #3	h	General Dredging Co.	811 West 7th St., Los Angeles	Rescue
Duffy-Stevens Property	h	W. D. Ingram	245 N. Gramercy Place, Los Angeles	Foresthill
Explorers Property	h	Barker Corporation	Box 696, Patterson	Coloma
Greenhorn Creek Unit	h	Eldorado Dredging Corporation	699 2d St., San Francisco	Georgetown
Indian Creek Unit	k	Orolomo Co.	Box 569, Sacramento	Placerville
Irish Creek Unit	h	Eldorado Dredging Corporation	699 2d St., San Francisco	Georgetown
River Pine	h	River Pine Mining Co.	Plymouth	Plymouth
Royce, Craig Property (Thacker)	h	A. L. Schreiber	245 N. Gramercy Place, Los Angeles	Coloma
Setter Property	h	Long Bar Gold Dredging Co.	935 Forum Bldg., Sacramento	Plymouth
Sliger	a	Middle Fork Gold Mining Co.	11 Broadway, New York City, N. Y.	Georgetown
Sturtevant, N. K., Property	h	A. L. Schreiber	245 N. Gramercy Place, Los Angeles	Coloma

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Fresno County				
Friant Dam Aggregate	k	Griffith Co., and Bent Co.	418 S. Pecan St., Los Angeles	Friant
Grant Pacific Rock Property	n	Twin Bar Mining Corporation	1537 College Ave., Berkeley	Fresno
Hopkins & Becker Dredge	n	Hopkins and Becker	832 Vassar Ave., Fresno	Friant
Humboldt County				
Klamath Dredge	e	Klamath Dredging Co.	351 California St., San Francisco	Orleans
Inyo County				
Columbia No. 2	m	Shoshone Mines, Inc.	Tecopa	Tecopa
Del Norte-Skidoo	a	Del Norte Mining Co.	Mojave	Panamint Springs
Reward (Brown Monster)	a	Dick Bright et al.	Independence	Independence
Ruth	a	Burton Bros.	Rosamond	Trona
Tucki	a	Louis Warnken	Box 30, Lone Pine	Panamint Springs
Kern County				
Big Blue	a	Kern Mines, Inc.	260 California St., San Francisco	Kernville
Big Butte	a, c	Butte Lode Mining Co.	650 S. Grand Ave., Los Angeles	Randsburg
Cactus Queen	b	Cactus Mines Co.	1206 Pacific Mutual Bldg., Los Angeles	Rosamond
Elephant-Eagle	a	Orlan Gagon et al.	Mojave	Mojave
Fairview	a	Watts & Lee	Rosamond	Rosamond
Golden Queen	a	Golden Queen Mining Co.	Mojave	Mojave
Kern Rock Co. Property	k	Kern Rock Co., Ltd.	Box 1697, Bakersfield	Bakersfield
Standard Hill	a	Standard Hill Mines Co.	2 Pine St., San Francisco	Mojave
Tropico	a	Burton Bros., Inc.	Rosamond	Rosamond
Yellow Aster	c	Anglo American Mining Corporation, Ltd.	206 Sansome St., San Francisco	Randsburg
Mariposa County				
Bear Creek Mine	h	Henry & Weaver	706 California Bldg., Stockton	Mariposa
Crocker-Huffman Land & Water Co.	h	Thurman & Wright	235 Montgomery St., San Francisco	Merced Falls
Feliciana	a	Russell J. Wilson	Midpines	Midpines
Jenny Lind	a	Lind Mining Co.	Hornitos	Hornitos
Lord, John, Property	h	Barker Corporation	Box 696, Patterson	Merced Falls
Malvina	a	Boston California Mining Co.	Sonora	Coulterville
Maxwell Creek Mine	h	E. A. Kent	Box 391, Stockton	Coulterville
Mount Gaines	a	Mount Gaines Mining Co.	Hornitos	Hornitos
Pierce Property	h	Trebor Corporation	Box 51, Mariposa	Mariposa
Pine Tree & Josephine	a	Pacific Mining Co.	1022 Crocker Bldg., San Francisco	Bear Valley
Schroeder	a	Schroeder, Odgers & Schroeder	Midpines	Midpines
Trabucco Property	h	Barker Corporation	Box 696, Patterson	Merced Falls
Merced County				
Merced Dredge	e	Merced Dredging Co.	1805 Mills Tower, San Francisco	Snelling
San Joaquin Dredge	e	San Joaquin Mining Co.	1805 Mills Tower, San Francisco	Snelling
Snelling Dredge	e	Snelling Gold Dredging Co.	Snelling	Snelling
Mono County				
Standard	a	Roseklip Mines Co.	Bodie	Bodie

a. Lode gold mine. b. Gold-silver mine. c. Tailings dumps. d. Pocket. e. Dredge (bucketline). f. Drift mine. g. Hydraulic mine. h. Dragline operations. j. Copper-gold mine. k. Power shovel or dryland dredge. m. Lead mine. n. Suction dredge.

11—30633

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

GOLD—Continued

Principal gold producers in California out of a total of placer operators and lode mines in 1942. (Not less than 200 ounces.)

Mine	Type of mine	Operator	Address	Postoffice of mine
Nevada County				
Brush Creek (pocket)	d	Dan Leighton	Grass Valley	Grass Valley
Empire, North Star, et al	a	Empire Star Mines Co., Ltd	14 Wall St., New York City, N. Y.	Grass Valley
Golden Center	a	Cooley Butler	745 Rowan Bldg., Los Angeles	Grass Valley
Idaho Maryland	a	Idaho Maryland Mines, Inc	Box 1028, Grass Valley	Grass Valley
Lava Cap	a	Lava Cap Gold Mining Corporation	Box 780, Nevada City	Nevada City
Malakoff	h	A. B. Innis	Nevada City	Nevada City
Omega	g	Omega Co., and lessees	Nevada City	Nevada City
Relief Hill	g	Western Gold, Inc	North Bloomfield	North Bloomfield
Placer County				
Alabama	a	Alabama California Gold Mines Co	Box 488, Auburn	Penryn
Duffy-Stevens Property	h	W. D. Ingram	Box 225, Foresthill	Foresthill
Forsyth & Lewis Property	h	Panob Gold Dredging Co	Route 9, Box 780, Sacramento	Lincoln
Lardner, F. H., Property	h	Gold Placers, Inc	Loomis	Loomis
Occidental	f	Lebanon Consolidated Mines	Box 55, Bowman	Iowa Hill
Oro Fino	a	Oro Fino Consolidated Mines	Box 432, Auburn	Auburn
Strap Ravine (Roseville Dredge)	e	Roseville Gold Dredging Co	315 Montgomery St., San Francisco	Roseville
Plumas County				
Cherokee	a	Cherokee Mine	200 Bush St., San Francisco	Greenville
Meadow Valley	h	Baker & McGowan	Box 305, Chico	Quincy
Ohio Point	a	Virgilia Mining Corporation	Virgilia	Virgilia
Plumas-Eureka	a	Portola Corporation	Johnsville	Johnsville
Riverside County				
Mission	a	J. T. Ake	Mecca	Twentynine Palms
Sacramento County				
Capital Dredge	e	Capital Dredging Co	351 California St., San Francisco	Fair Oaks
Cosumnes Dredge	e	Cosumnes Gold Dredging Co	351 California St., San Francisco	Sloughhouse
Dredge #1	h	Hoosier Gulch Placers	1015 25th St., Sacramento	Sloughhouse
Dredge #2	h	Hoosier Gulch Placers	1015 25th St., Sacramento	Sloughhouse
Dredge #1	h	General Dredging Co	811 W. 7th St., Los Angeles	Folsom
Dredge #2	h	General Dredging Co	811 W. 7th St., Los Angeles	Natoma
Dredge #4	h	General Dredging Co	811 W. 7th St., Los Angeles	Fair Oaks
Fair Oaks	k	Fair Oaks Gravel Co	1401 42d St., Sacramento	Fair Oaks
Hutchison Property	h	Humphreys Gold Corporation	Sloughhouse	Fair Oaks
Lancha Plana Dredge #4	e	Lancha Plana Gold Dredging Co	Lockeford	Fair Oaks
Natomas	e	Natomas Co	Forum Building, Sacramento	Natoma

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

San Bernardino County				
Bagdad-Chase	a	Frank Royer	Red Mountain	Ludlow
Big Bear (Lucky Baldwin)	a	Big Bear Mines Ltd., Inc.	Box 699, Big Bear Lake	Big Bear City
Gladstone	a	Leroy A. Wilson	Twentynine Palms	Twentynine Palms
Gold Crown	a	Gold Crown Mining Co., Ltd.	714 W. Olympic Blvd., Los Angeles	Twentynine Palms
Kelly	b	Frank W. Royer	Red Mountain	Red Mountain
Telegraph	a	J. W. Belcoe	Yucca Grove via Nipton	Baker
Vulcan	a	Roshley Inc., & Vulcan Mg. Co.	Cadiz	Cadiz
San Joaquin County				
Cady, Elmer, Ranch	h	Smith-Notterman Co.	245 W. Rose St., San Francisco	Jenny Lind
California Lands Property	e	Gold Hill Dredging Co.	311 California St., San Francisco	Camanche
Central Bank of Calaveras Property	e	Gold Hill Dredging Co.	311 California St., San Francisco	Camanche
Foster Ranch	h	Lobicasa Co.	Box 812, Sacramento	Wallace
Putnam Property	e	Gold Hill Dredging Co.	311 California St., San Francisco	Camanche
Thorne Property	e	Gold Hill Dredging Co.	311 California St., San Francisco	Camanche
Watkins Dredge	h	Watkins Dredging Co.	Linden	Linden
Shasta County				
B. H. K.	h	B. H. K. Mines	Orland	Shasta
Clear Creek Dredge	h	Clear Creek Dredging Co.	Box 598, Redding	Redding
Crow Creek Dredge	h	Crow Creek Dredging Co.	Box 558, Redding	Redding
French Gulch	e	French Gulch Dredging Co.	2404 Russ Bldg., San Francisco	French Gulch
Iron Mountain	j	The Mountain Copper Co., Ltd.	216 Pine St., San Francisco	Matheson
Kutras Tract	k	Columbia Construction Co., Inc.	Box 579, Redding	Redding
St. Jude	a	St. Jude Mining Co.	French Gulch	French Gulch
Thurman Dredge	e	Thurman Gold Dredging Co.	235 Montgomery St., San Francisco	Redding
Washington	a	J. A. Scott Co.	465 California St., San Francisco	French Gulch
Sierra County				
Alaska	a	H. L. Sorensen	685 6th St., San Francisco	Pike
Bowman	a	W. C. Ennis	North San Juan	North San Juan
Original 16 to 1	a	Original Sixteen to One Mine, Inc.	Alleghany	Alleghany
P. G. & E. Property	h	Wm. Richter & Sons	Route 2, Box 400, Oroville	Downieville
Poverty Hill	e	Poverty Hill Partnership	974 Mills Bldg., San Francisco	Strawberry Valley
Siskiyou County				
C. & E. Dredge	e	C. & E. Dredging Co.	1002 Pacific Bldg., Portland, Ore.	Fort Jones
City of Yreka	h	Lincoln Gold Dredging Co.	Lincoln	Yreka
Dania	h	Larsen and Harms	Route 4, Box 2220, Sacramento	Horsecreek
General Dredge	h	Lincoln Gold Dredging Co.	Lincoln	Yreka
Indian Creek Mine	h	Beaver Dredging Co.	615 F St., Marysville	Fort Jones
Joubert	g	Stanley Czerwinski	Sawyers Bar	Sawyers Bar
Judge, J. F.	g	Frank R. Jackson	Sawyers Bar	Sawyers Bar
Klamath River (McConnell Bar)	h	Wm. Von der Hellen Mining Co.	P.O. Box 1026, Medford, Ore.	Horsecreek
Lemos Ranch	h	Shasta Dredging Co.	737 N. Central Ave., Stockton	Yreka
Midland	h	Midland Co., Inc.	1112 Pearl St., Alameda	Sawyers Bar
Moccasin	h	Larsen and Harms	Route 4, Box 2220, Sacramento	Horsecreek
Nunes Property	h	Lincoln Gold Dredging Co.	Lincoln	Yreka

a. Lode gold mine. b. Gold-silver mine. c. Tailings dumps. d. Pocket. e. Dredge (bucketline). f. Drift mine. g. Hydraulic mine. h. Dragline operations. j. Copper-gold mine. k. Power shovel or dryland dredge. m. Lead mine. n. Suction dredge.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

GOLD—Continued

Principal gold producers in California out of a total of placer operators and lode mines in 1942. (Not less than 200 ounces.)

Mine	Type of mine	Operator	Address	Postoffice of mine
Siskiyou County—Continued				
Quartz Hill	a	George A. Milne	Fort Jones	Scott Bar
Rose Property	h	Lincoln Gold Dredging Co.	Lincoln	Yreka
Scandia	h	Larsen and Harms	Route 4, Box 2220, Sacramento	Horsecreek
Siskiyou Unit	e	Yuba Consolidated Gold Fields	351 California St., San Francisco	Callahan
Webber, Edward F., Mine	h	Edward F. Webber	Box 217, Yreka	Horsecreek
Yreka Gold Dredge	e	Yreka Gold Dredging Co.	220 Montgomery St., San Francisco	Seiad Valley
Stanislaus County				
Dredge #4	e	La Grange Gold Dredging Co.	1805 Mills Bldg., San Francisco	La Grange
Placer Properties Co. Property	h	Placer Properties Co.	P.O. Box 532, Oakdale	Oakdale
Stanislaus Unit	e	Yuba Consolidated Gold Fields	351 California St., San Francisco	Hickman
Tuolumne Gold Dredge	e	Tuolumne Gold Dredging Co.	1 Montgomery St., San Francisco	La Grange
Trinity County				
Albiez Property	h	Cinco Mineros Co.	First National Bank Bldg., Oroville	Hayfork
Bazet Estate Property	h	Oscar R. Batham Dredging Co.	Box 325, Concord	Weaverville
Brady, M. A., Claim	h	Dobbin Gulch Dredging Co.	Redding	Weaverville
Broullard Property	h	Havilah Gravels Inc.	Lewiston	Lewiston
Brown Bear	a	Brown Bear Mining & Development Co.	703 Central Bank Bldg., Oakland	Lewiston
Carr Ranch	e	Carrville Gold Co.	351 California St., San Francisco	Trinity Center
Costa Property	h	Lincoln Gold Dredging Co.	Lincoln	Lewiston
Eastman Group	h	Havilah Gravels Inc.	Lewiston	Lewiston
Junction City	e	Junction City Mining Co.	685 6th St., San Francisco	Junction City
La Grange	g	La Grange Placer Mines, Ltd.	Box 141, Weaverville	Weaverville
Red Hill	g	Goldfield Consolidated Mines Co.	1 Montgomery St., San Francisco	Junction City
Sunshine	h	Dobbin Gulch Dredging Co.	Redding	Weaverville
Trimble Property	h	Cinco Mineros Co.	Box 212, Oroville	Hayfork
Tuolumne County				
Eagle-Shawmut	a	Miller and Clemson	4800 Santa Fe Ave., Los Angeles	Chinese Camp
Lyons Ranch	h	E. A. Kent	260 California St., San Francisco	Jamestown
Rosasco Ranch	h	E. A. Kent	260 California St., San Francisco	Jamestown
Yuba County				
Dannebrog	a	Empire Star Mines Co., Ltd.	14 Wall St., New York City, N. Y.	Browns Valley
Eymard Ranch	h	Lobicasa Company	Box 812, Sacramento	Marysville
First Chance	h	R & M Mining Co.	La Porte	La Porte
Leary, Eleanor E.	e	Williams Bar Dredging Co.	Box 575, Marysville	Smartsville
Yuba Unit	e	Yuba Consolidated Gold Fields	351 California St., San Francisco	Hammonton

a. Lode gold mine. b. Gold-silver mine. c. Tailings dumps. d. Pocket. e. Dredge (bucketline). f. Drift mine. g. Hydraulic mine. h. Dragline operations. j. Copper-gold mine. k. Power shovel or dryland dredge. m. Lead mine. n. Suction dredge.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

GRANITE

Operator	Product	Address	Location of quarry
Fresno County			
Superior-Academy Granite Co.	a	Clovis	Academy
Lassen County			
Greig Quarry, A. D. Greig	a	Susanville	Susanville
Madera County			
Madera Quarries Co.	a	Box 156, Madera	Bates Station
Placer County			
Union Granite Co., Ruhkala Bros.	a	Rocklin	Rocklin
Victor Wickman	a	Rocklin	Rocklin
Riverside County			
Emil Johnson	a	Perris	Perris
Sacramento County			
Folsom State Prison	a, e	Represa	Represa
San Bernardino County			
Texas Quarries, Inc., R. M. Richter	a	Box 605, Victorville	Victorville
San Diego County			
Crystal Black Quarry, John Stridsburg	a	Escondido	Spooks Canyon
Sonoma County			
S. Cabrol	b, c	Glen Ellen	Glen Ellen
Ventura County			
W. G. Dryden	c	Fillmore	Grimes Canyon

a. Granite used in building and monumental stone. b. Tuff used as building stone. c. Volcanic rock used as flagstone and building stone. d. Mica schist used as building stone. e. Paving blocks.

Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

GYPSUM

Operator	Address	Location of quarry
Alameda County		
Westvaco Chlorine Prod. Corp.*	Newark	Newark
Imperial County		
Imperial Gypsum Quarry, Pacific Portland Cement	417 Montgomery St., San Francisco	Plaster City
Kern County		
Handel & Son	Shafter	Lost Hills
H. M. Holloway	Box 310, Lost Hills	Lost Hills
Theta Gypsum Co.	Lost Hills	Lost Hills
Valley Agricultural Gypsum Co.	Box 186, Shafter	Belridge
Western Gypsum Co.	Box 846, McKittrick	McKittrick
Monterey County		
Triangle Fertilizer Co.	Salinas	King City
Riverside County		
U. S. Gypsum Co.	507 Architects Bldg., Los Angeles	Midland
Ventura County		
A. H. Lange**	Box 194, Tehachapi	Cuyana Valley
Monolith Portland Cement Co.	Bartlett Bldg., Los Angeles	Cuyana Valley

* Output not included in production figures as gypsum is by-product of chemical process using minerals already included in State total.
** Sold to Monolith Portland Cement Co. in March 1942.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

IODINE

Operator	Address	Mine
Los Angeles County		
Deepwater Chemical Co., Ltd.	Box 588, Compton	Compton
The Dow Chemical Co.	Midland, Mich.	Long Beach and Venice

IRON

Operator	Address	Location of mine
Inyo County		
L. E. Netherton	Red Mountain	Inyokern
San Bernardino County		
Altuda Mining Co.	725 S. Freemont Ave., Alhambra	Hodge
Kaiser Co., Inc., Iron and Steel Division	515 Latham Square Bldg., Oakland	Kelso
Minerals Material Co.	1145 Westminster Ave., Alhambra	Baxter
Shasta County		
Shasta Iron, Carrico & Bautier	365 Ocean Ave., San Francisco	Heroult
Trinity County		
F. B. Cayot	Golden Eagle Hotel, Redding	

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

LEAD

Principal lead producers in California in 1942. (Not less than 10,000 pounds.)

Mine	Operator	Address	Postoffice of mine
Inyo County			
Columbia No. 2	Shoshone Mines, Inc.	Tecopa	Tecopa
Colorado	Combined Metals Reduction Co.	Box 84A, Lone Pine	Panamint Springs
Defence	C. C. King	Keeler	Panamint Springs
Essex-Columbia (Darwin Lead)	Imperial Metals, Inc.	Darwin	Darwin
Gold Bottom	L. E. Damon	Trona	Trona
Honolulu	Southwest Lead & Zinc Co.	433 S. Spring St., Los Angeles	Trona
Last Chance	L. D. Foreman	Keeler	Keeler
Leary	Desert Miners	Lone Pine	Keeler
Ophir	C. O. Mittendorf	Trona	Trona
Mariposa County			
Malvina	Boston California Mining Co.	Sonora	Coulterville
Nevada County			
Lava Cap	Lava Cap Gold Mining Co.	Box 780, Nevada City	Grass Valley
Placer County			
Alabama	Alabama California Gold Mines Co.	Box 488, Auburn	Penryn
San Bernardino County			
Carbonate King	W. F. Huston	Mountain Pass via Nipton	Nipton
Iron Horse	F. C. Fritz	Nipton	Baker
Sagamore (Alpha)	California Sulphur Co.	1427 E. 4th St., Los Angeles	Ivanpah

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Operator	Product	Address	Location of quarry
Alameda County			
Westvaco Chlorine Prod. Corp.	a, d	Newark	Newark
El Dorado County			
Auburn Chemical Lime Co., Ltd.*	a, b	Auburn	Newcastle
Diamond Springs Lime Co.	a, b, c	Diamond Springs	Diamond Springs
El Dorado Limestone Co., J. H. Bell, Pres.	b	Shingle Springs	Shingle Springs
Inyo County			
Blue Star Mines, Ltd.	b	Room 510, 810 S. Spring St., Los Angeles	Zurich
Los Angeles County			
W. F. Glasser, Inc.	b	713 N. Sepulveda, Brentwood Heights, Los Angeles	Bel-Air
Riverside County			
Howard Small	b, c	311 Main St., Riverside	Riverside
San Bernardino County			
Cal. Portland Cement Co.	a, b	601 W. 5th St., Los Angeles	Colton
Chubbuck Lime Co., Chas. I. Chubbuck	a, b, c	5000 Worth St., Los Angeles	Chubbuck
Mill Creek Limestone Co.	b	6009 Santa Monica Blvd., Los Angeles	----------
San Bernardino Limestone Co., Inc.	b	1713 W. 8th St., Los Angeles	----------
Victorville Lime Rock Co.	b	5225 Wilshire Blvd., Los Angeles	Victorville
San Luis Obispo County			
Charles Taylor	b	Salinas	Cambria
San Mateo County			
Pacific Portland Cement Co.	c, d	417 Montgomery St., San Francisco	Redwood City
Santa Clara County			
Bay Shell Co.	c, d	503 Market St., San Francisco	Alviso
Beck Dredging Co.	c, d	Box 113, Coloma	Alviso
Santa Cruz County			
Henry Cowell Lime and Cement Co.	a, b	2 Market St., San Francisco	Santa Cruz
Pacific Limestone Prod. Co.	b, c	Spring St., Santa Cruz	Santa Cruz
Tuolumne County			
Walter C. Sundberg	b	Box 653, Sonora	Sonora
U. S. Lime Products Corp.	a, b	58 Sutter St., San Francisco	Sonora
Ventura County			
Western Lime Products Co.	b, c	6305 Yucca St., Los Angeles	Santa Susana

a. Producer of burnt lime. b. Producer of limestone. c. Agricultural lime. d. Shells.
* Plant now idle.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

LITHIA

Operator	Address	Location of mine
American Potash & Chemical Corp.	Trona	Trona

MAGNESITE

Operator	Address	Location of mine
Alameda County		
Westvaco Chlorine Prod. Corp.*	405 Lexington Ave., New York, N. Y.	Newark
Magnesite Products Co., Operator Red Mountain Mine	903 Ray Bldg., Oakland	Red Mountain
Santa Clara County		
Westvaco Chlorine Prod. Corp., Lessee, Western Magnesite Mine	405 Lexington Ave., New York, N. Y.	Red Mountain
Stanislaus County		
Westvaco Chlorine Prod. Corp., Lessee, Bald Eagle Mine	405 Lexington Ave., New York, N. Y.	Gustine

* Magnesium oxide reduced from sea water and used as magnesite.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

MAGNESIUM SALTS

Operator	Product	Address	Location of plant
Alameda County			
Westvaco Chlorine Prod. Corp.	Hydroxide	405 Lexington Ave., New York, N. Y.	Newark
Imperial County			
Smith Salt-cake Deposit, C. D. Adams	Sulphate	2073 N. San Antonio Ave., Pomona	Mecca
San Diego County			
Westvaco Chlorine Prod. Corp.	Chloride	405 Lexington Ave., New York, N. Y.	San Diego
San Mateo County			
Marine Magnesium Prod. Corp., R. E. Clarke	Carbonate hydroxide and oxide	South San Francisco	South San Francisco
Plant Rubber & Asbestos Works	Carbonate	537 Brannan St., San Francisco	Redwood City

MANGANESE ORE

Operator	Address	Location of mine
Alameda County		
Bonanza Mine, Coast Manganese Co.	Box 266, Tracy	Tracy
Amador County		
Joseph T. Stacy	Pine Grove	Pine Grove
Imperial County		
V. B. Whedon, d.b.a. Whedon Manganese Mines	214 Bank of America Bldg., Beverly Hills	Glamis
Humboldt County		
The Crossman Co.	Alderpoint	Alderpoint
Marin County		
L. R. Knutte	Nave Bldg., Novato	Novato
Mendocino County		
Chester Linser	Bell Springs	Bell Springs
Lucky Boy Mine, Car-Cor-Van Minerals Co.	La-Z Moon Ranch, Willits	Foster Mt.
Ray F. Helmke	Alderpoint	Alderpoint

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

MANGANESE ORE—Continued

Operator	Address	Location of mine
Nevada County		
Mangachrome Co., Chas. Neville	Box 448, Auburn	Auburn
Plumas County		
Western Manganese Mine, O. H. Griggs	Crescent Mill	Crescent Mill
Riverside County		
Arlington Group, A. B. Miner	11143 Washington Blvd., Culver City	Inca
San Bernardino County		
Kern Leasing Co., Howard W. Orwig	2157 W. Washington Blvd., Los Angeles	Barstow
Logan Manganese Mine, Suckow Borax Mines, Cons.	40 St. James Park, Los Angeles	Hector
San Joaquin County		
Phio Winegar	Box 246, Vernalis	Vernalis
San Luis Obispo County		
A. T. Adams, Irish Hill Manganese Mine	Box 95, San Luis Obispo	San Luis Obispo
Pacific Coast Manganese Co.	P.O. Box 295, San Miguel	San Miguel
Santa Clara County		
Black Oak & Matt Mine, Barker Corp.	Box 696, Patterson	Patterson
Black Hawk Mine, Mineral Process Development Co.	8733 B St., Oakland	Patterson
Pine Ridge Manganese Mine, Alfred J. Jackson	Morgan Hill	Madrone
Sonoma County		
Aho Mine, Humphreys Gold Corp.	910 First National Bank Bldg., Denver, Colo.	Cazadero
Stanislaus County		
Buckeye Mine, Verner Allen	150 Montgomery St., San Francisco	Vernalis
Liberty & Peter Moy Mines, Humphreys Gold Corp.	910 First National Bank Bldg., Denver, Colo.	Patterson
Tip Top Mine, M. A. Wright	Box 237, Patterson	Patterson
Western Manganese Co.	519 California St., San Francisco	Patterson
J. P. Warren	605 Market St., San Francisco	Patterson
Trinity County		
Ray F. Helmke	Alderpoint	Alderpoint
Manganese Queen Mine, A. Gronzotto	Box 224, Walnut Creek	Forest Glen
McKnight Group, James I. Scott & Co.	P.O. Box 624, Fortuna	Ruth
Tulare County		
Z. E. Page	129 Honolulu St., Lindsay	Camp Nelson

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:08 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

MARBLE (Including Onyx and Travertine)

Operator	Product	Address	Location of quarry
San Luis Obispo County			
Renolds Quarry, Thomas C. Renolds	b	Rt. 1A, Box 53, Paso Robles	Paso Robles
Solano County			
United Quarries, Inc.	c	666 Mission St., San Francisco	Cement

b. Limestone for building and flagstone. c. Travertine.

MINERAL PAINT

Operator	Address	Location of property
San Bernardino County		
Rowe-Buehler Mining Co., Wesley N. Rowe	919 E. Valley Blvd., Rosemead	Lavic
Stanislaus County		
Lester Raggio	Knights Ferry	Knights Ferry

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

MINERAL WATER

Operator	Address	Location of spring
Butte County		
Richardson Mineral Springs, Lee Richardson, Mgr.	Richardson Springs	Richardson Springs
Colusa County		
Cooks Springs, Don Mason	Williams	Cooks Springs
Contra Costa County		
Alhambra Water Co.	Martinez	Martinez
Fox Water Co.	675 37th St., Oakland	Oak Springs
Lake County		
Adams Mineral Springs, Clarence Prather	Adams, via Middletown	Adams
Bartlett Springs Co.	Bartlett Springs, via Williams	Bartlett Springs
Howard Hot Springs, J. P. Francisco	Middletown	Middletown
Norman Mineral Springs, H. C. Norman, Mgr.	Middletown	Middletown
Witter Medical Springs, W. E. Whitaker	1234 5th Ave., San Francisco	Witter Springs
Los Angeles County		
Deep Rock Artesian Water	4416 York Blvd., Los Angeles	Los Angeles
Elysian Spring Water Co.	1536 Baxter, Los Angeles	Los Angeles
Frespuro Artesian Water	4430 York Blvd., Los Angeles	Los Angeles
Holly Spring Water	2298 Holly Dr., Los Angeles	Los Angeles
Indian Head Mineral Water	3640 N. Griffin Ave., Los Angeles	Los Angeles
Magnetic Spring Water Co.	936 Palm Ave., Sherman	Los Angeles
Mountain Spring Water Co.	226 S. Avenue 54, Los Angeles	Los Angeles
Sparklett Bottled Water Corp.	4500 York Blvd., Los Angeles	Los Angeles
Marin County		
Purity Spring Water Co.	2032 Kearny St., San Francisco	
Napa County		
Calistoga Bottling Works, Ernest Mainini	Calistoga	Calistoga
Napa Soda Springs Co., G. H. T. Jackson	315 Montgomery St., San Francisco	Napa
Napa Vichy Springs, V. Frugoli	146 11th St., San Francisco	Napa
Samuels Soda Springs, T. B. Grigsby	Monticello	Monticello
Orange County		
La Vida Mineral Springs Co.	Route 1, Placentia	Carbon Canyon
Placer County		
Kilaga Water Co.	Lincoln	Valley

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Riverside County		
Beulah Springs, Oscar C. McNicholl	Arlington	Arlington
San Bernardino County		
Arrowhead & Puritas Waters, Inc.	1566 E. Washington Blvd., Los Angeles	Arrowhead
San Diego County		
Cuyamaca Mineral Water, San Diego Ice & Cold Storage Co.	67 8th St., San Diego	San Diego
Rock Springs Co., L. H. Walck	Route 2, Box 224-A, Escondido	Escondido
San Luis Obispo		
New Crystal Spring Water Co., Ellen M. Hudson	Route 2, Box 11, San Luis Obispo	San Luis Obispo
Shasta County		
Hilltop Spring Water Co.	Redding	Shasta
Mountain Spring Water Co.	1056 Gilbert St., Redding	Redding
Siskiyou County		
Coca Cola Bottling Co., Fred J. Meamber, Prop.	Yreka	Little Shasta
The Shasta Water Co.	6th and Brannan Sts., San Francisco	Dunsmuir
Sonoma County		
Agua Caliente Springs Co., T. H. Corcoran, Prop.	Agua Caliente	Agua Caliente
Barcal Springs, John Kolling	Cloverdale	Cloverdale
Boyes Springs Mineral Water Co.	Boyes Springs	Boyes Springs
Fetters Mineral Springs, George Fetters	Fetters Springs	Fetters Springs

MOLYBDENUM ORE

Mine	Operator	Address	Location of mine
Pine Creek Mine	United States Vanadium Corp.	Bishop	Bishop

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

PLATINUM

Principal Platinum Producers in California in 1940

Operator	Address	Location of mine
Merced County		
Merced Dredging Co.	Mills Bldg., San Francisco	Snelling
San Joaquin Milling Co.	Mills Bldg., San Francisco	Snelling
Sacramento County		
Capital Dredging Co.	351 California St., San Francisco	Folsom, Sloughhouse
Natomas Co.*	Forum Bldg., Sacramento	Natomas
San Joaquin County		
Gold Hill Dredging Co.	311 California St., San Francisco	Camanche
Siskiyou County		
Yuba Consolidated Gold Fields*	351 California St., San Francisco	Callahan
Stanislaus County		
La Grange Gold Dredging Co.	Mills Bldg., San Francisco	La Grange
Yuba Consolidated Gold Fields*	351 California St., San Francisco	Waterford
Trinity County		
Cinco Minersa Co.	Box 212, Oroville	Hayfork
Junction City Mining Co.	Junction City	Junction City
Yuba County		
Yuba Consolidated Gold Fields*	351 California St., San Francisco	Hammonton

* Platinum metals not sold in 1942.

POTASH

Operator	Address	Location of plant
San Bernardino County		
American Potash and Chemical Co.	Trona	Trona

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:05 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

PUMICE OR VOLCANIC ASH

Operator	Product	Address	Location of property
Inyo County			
American Pumice Co.	a	4031 Goodwin Ave., Los Angeles	Little Lake
Chas. Brown	a	Shoshone	Shoshone
Straight Line Pumice Co., B. J. Compton	a	602 Woodrow St., Bakersfield	Coso Junction
Pacific Coast Pumice Co., C. W. Churchill	a	P.O. Box 656, Bishop	Bishop
Kern County			
Calsilico Corp., G. A. Reynolds	b	445 S. Amalia Ave., Los Angeles	Cantil
Cudahy Packing Co.	b	803 Macy St., Los Angeles	Ceneda
Madera County			
Calif. Industrial Minerals, c/o Forrest S. Taylor	b	Friant	Friant
Elmer Erickson	a	Friant	Friant
Modoc County			
Glass Mt. Volcolite Co., H. W. Free	b, c	Tionesta	Tionesta
Mono County			
American Pumice Co.	a	4031 Goodwin Ave., Los Angeles	Laws
Alexander Jamieson	d	Box 704, Big Pine	Big Pine
Napa County			
Basalt Rock Co.	a	8th St., Napa	Monticello
San Luis Obispo County			
Red Eagle Mine, M. L. Francis	b	Creston	Creston
Siskiyou County			
Glass Mt. Volcolite Co., H. W. Free	a, c, d	Tionesta	Glass Mountain
Mrs. E. L. Jameson	a, d	Tennant	Tennant
Klamath Concrete Pipe Co.	a	Klamath Falls, Ore.	Glass Mountain

a. Pumice, aggregate. b. Volcanic ash. c. Scoria. d. Pumice for scouring brick.

PYRITE

Operator	Address	Location of mine
Shasta County		
Mountain Copper Co., Wm. F. Kett, Mgr.	216 Pine St., San Francisco	Matheson

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

QUICKSILVER

Principal Producers in California for 1942, out of a Total of 102 Operating Properties

Mine	Operator	Address	Location of mine
Colusa County			
Manzanita	Douglas Mercury Co., Egbert T. Willard	Mills Bldg., San Francisco	Wilbur Springs
Contra Costa County			
Mt. Diablo	Bradley Mining Co.	Crocker Bldg., San Francisco	Clayton
Fresno County			
Archer	Joseph Byles & Sons	Coalinga	Coalinga
Arrambade	General Dredging Co.	Natoma	Mercy Hot Springs
Santa Reta	Anita Mining Co.	3025 Fletcher Drive, Los Angeles	Idria
Kings County			
Dawson Pit	Jack Ellena	Burrel	Avenal
Lake County			
Abbott	International Metals Dev. Inc., C. O. Reed, Mgr.	Williams	Wilbur Springs
Bullion	A. P. Otto & Bert Bachetti	Middletown	Middletown
Great Western	Bradley Mining Co.	Crocker Bldg., San Francisco	Middletown
Helen	Alan Fleishhacker	200 Bush St., San Francisco	Middletown
Mirabel	Mirabel Quicksilver Co.	Middletown	Middletown
Red Elephant	Red Elephant Mines, Inc.	58 Sutter St., San Francisco	Reiff
Sulphur Bank	Bradley Mining Co.	Crocker Bldg., San Francisco	Clearlake Park
Napa County			
Bella Oaks	F. A. Bachich	St. Helena	Oakville
Corona	Twin Peaks Mining Co.	315 Montgomery St., San Francisco	Aetna Springs
Eureka	A. Garcia	Box 513, Middletown	Pope Valley
James Creek	J. L. Stockton	Pope Valley	Pope Valley
Knoxville	Geo. E. Gamble	1431 Waverly St., Palo Alto	Monticello
Manhattan Mine	Chas. Wilson & W. M. Hickox	Monticello	Monticello
Oat Hill	H. W. Gould & Co.	Penthouse, Mills Bldg., San Francisco	Aetna Springs
Oat Hill Extension	Zack Anderson	Middletown	Aetna Springs
San Benito County			
Aurora	G. H. & L. Mining Co., Leon Grivel	1736 W. Slauson Ave., Los Angeles	Idria
El Rey	B. T. Garcia	Hollister	Llanada
Lea-Grante	Lea-Grante Mine, E. H. L. Mitchell, Mgr.	Paicines	Paicines
Lucky Strike	Geo. W. McIntyre	117 Glendora Ave., Long Beach	Paicines
New Idria	New Idria Quicksilver Mining Co.	Mills Bldg., San Francisco	Idria
Panoche	Panoche Quicksilver Mining Co., P. D. Burtt	1078 Mills Bldg., San Francisco	Llanada
Stayton Quicksilver	R. B. Knox	Hollister	Hollister
Wonder	Paul Gonzales	Box 268, Soledad	Idria

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

San Luis Obispo County			
Buena Vista	A. R. McCartney	Salinas	Paso Robles
Echo Butte	Echo Butte Co., E. T. Atchinson, Mgr.	Cambria	Cambria
Klau	H. W. Gould & Co.	Mills Bldg., San Francisco	Adelaide
Oceanic	American Quicksilver Co.	Cambria	Cambria
Pine Mountain	Oscar E. Hanno	Box 242, Cambria	Cambria
Polar Star	E. D. Rodgers	59 Laurente St., Santa Cruz	San Simeon
Rinconada	W. R. Cantlay	Box 101, Santa Margarita	Santa Margarita
Santa Barbara County			
Los Prietos	Falcon Mercury Co.	Box 117, Santa Barbara	Santa Barbara
Red Rock	Cachoma Mining Co., L. W. Wickes	1206 Pacific Mutual Bldg., Los Angeles	Solvang
Santa Clara County			
Chaboya	L. H. Stotesberry	Rt. 3, Box 296-F, Los Gatos	Almaden
Guadalupe	Laco Mining Co., H. N. Mason	Rt. 3, Box 412, Los Gatos	Los Gatos
Hunt & Grunt	Frank B. Pfeiffer	Almaden	Almaden
New Almaden	New Almaden Corp., C. N. Schuette, Gen. Mgr.	Call Bldg., San Francisco	Almaden
New Almaden Dump	Dave & Ben Black (Owners)	Rt. 3, Box 314, Los Gatos	Almaden
Slater	Mespa Mining Co.	503 Bank of America Bldg., Glendale	Almaden
Siskiyou County			
Great Northern	Empire Canyon Quicksilver Mines	Box 488, Yreka	Hornbrook
Sonoma County			
Big Red	Frank E. Dewey	Cloverdale	Cloverdale
Cloverdale	Schor, Rocca & Garcia	Cloverdale	Cloverdale
Culver Bear	C. A. Bumester	Cloverdale	Cloverdale
Eagle Rock	L. H. Richard	Box 221, Cloverdale	Cloverdale
Great Eastern	Magee Mercury, Inc.	69 Sutter St., San Francisco	Guerneville
Mt. Jackson	Sonoma Quicksilver Mines, Inc.	58 Sutter St., San Francisco	Guerneville
Skaggs Springs	Star Springs Mercury, Inc.	Skaggs Springs	Skaggs Springs
Socrates	Contact Quicksilver Co.	1924 Broadway, Oakland	Pine Flat
Trinity County			
Altoona	Altoona Quicksilver Mining Co., C. W. Erickson	98 Cervantes, San Francisco	Castella
Yolo County			
Reed	Bradley Mining Co.	Crocker Bldg., San Francisco	Rumsey

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

SALT

Operator	Address	Location of plant
Alameda County		
American Salt Co., Mrs. Mary Marsicano	341 Broadway, San Francisco	Mt. Eden
Leslie Salt Co.	310 Sansome St., San Francisco	Newark and Mt. Eden
Oliver Bros. Salt Co.	Mt. Eden	Mt. Eden
Imperial County		
Imperial Salt Co.	4000 E. Washington Blvd., Los Angeles	Calipatria
Mullet Island Salt Works	Niland	Niland
Inyo County		
Mineral Materials Co., J. W. Dunton, Mgr.	1145 Westminster Ave., Alhambra	Badwater
Kern County		
Long Beach Salt Co.	P.O. Box 28, Long Beach	Saltdale
Los Angeles County		
Long Beach Salt Co.	P.O. Box 28, Long Beach	Long Beach
Modoc County		
Surprise Valley Salt Works, Joshua H. Hutchinson	Box 26, Cedarville	Lake City
Monterey County		
Monterey Bay Salt Works, E. C. Vierra, Mgr.	Moss Landing	Moss Landing
Orange County		
The Irvine Co.	Tustin	Tustin
San Bernardino County		
California Rock-Salt Co.	2465 Hunter St., Los Angeles	Amboy
Chemical Mines Co., Irving E. Bush	1116 Pacific Mutual Bldg., Los Angeles	Twentynine Palms
Desert Chemical Co.	4031 Goodwin Ave., Los Angeles	Amboy
Rock Salt Products Co.	845 El Centro St., South Pasadena	Salt Marsh
San Diego County		
Western Salt Co.	1245 National Ave., San Diego	San Diego

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

SANDSTONE

Operator	Address	Location of quarry
Colusa County		
H. F. Galbreath	1668 Lincoln St., Berkeley	
Los Angeles County		
W. F. Glasser, Inc.	713 N. Sepulveda, Brentwood Heights, Los Angeles	Brentwood Heights
Monterey County		
Carmel Stone Quarry, A. L. Possadori	Carmel	Carmel
Sierra Quarry, H. E. Rogers	Box 136, Carmel	Carmel
Napa County		
H. F. Galbreath	1668 Lincoln St., Berkeley	
San Bernardino County		
William C. Buehler	1555 Sunset Ave., Pasadena	Ludlow
San Luis Obispo County		
C. A. Nidever	R.F.D. 1, Box 56, Paso Robles	Paso Robles
Shasta County		
H. F. Galbreath	1668 Lincoln St., Berkeley	Ono

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

SILICA

Operator	Product	Address	Location of mine
Contra Costa County			
Hazel-Atlas Glass Co. of California, Ltd.	b	87th and G Sts., Oakland	Summerville
Silica Co. of California, Ltd.	b	Brentwood	Brentwood
Kern County			
A. H. Lange	a	Box 194, Tehachapi	Tehachapi
Mariposa County			
The Permanente Metals Corp.	a	Permanente	La Grande
Monterey County			
Owens-Illinois Pacific Coast Co.*	b	135 Stockton St., San Francisco	Del Monte
Orange County			
Arnold Clay Mine, I. P. Arnold	b	1846 W. 83d St., Los Angeles	El Toro
Riverside County			
P. J. Weisel, Inc.	b	La Habra	Corona
San Bernardino County			
Gladding, McBean & Co.	a	2901 Los Feliz Blvd., Los Angeles	
Mineral Materials Co., C. W. Dunton, Mgr.	a	1145 Westminster Ave., Alhambra	
Suckow Borax Mines Cons.	a	40 St. James Place, Los Angeles	Baldwin Lake
Temescal Clay Co.	c	8601 Dorothy Ave., South Gate	Victorville
San Diego County			
American Radiator & Standard Sanitary Corp.	a	Campo	Campo

a. Quartz. b. Glass sand. c. Quartzite.
* Will start producing in 1943.

SILLIMANITE-ANDALUSITE-CYANITE GROUP

Operator	Product	Address	Location of mine
Imperial County			
Vitrefrax Co.	Cyanite	5050 Pacific St., Vernon, Los Angeles	Ogilby
Mono County			
Champion Sillimanite, Inc.	Andalusite	Box 117, Laws	Mocalno

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

SILVER

Principal Silver Producers in California in 1942. (*Not less than 2,000 ounces*)

Mine	Type of mine	Operator	Address	Postoffice of mine
Amador County				
Central and Old Eureka	a	Central Eureka Mining Co.	Sutter Creek	Sutter Creek
Butte County				
Surcease	a	Hoefling Bros.	Rt. 1, Oroville	Oroville
Calaveras County				
Carson Hill	a	Carson Hill Gold Mining Corporation	Star Route, Angels Camp	Melones
Inyo County				
Columbia No. 2	m	Shoshone Mines, Inc.	Tecopa	Tecopa
Essex-Columbia (Darwin Lead)	b	Imperial Metals, Inc.	Darwin	Darwin
Last Chance	b	L. D. Foreman	Keeler	Darwin
Ophir	m	C. O. Mittendorf	Box 321, Randsburg	Trona
Pine Creek	r	United States Vanadium Corporation	30 E. 42d St., New York City, N. Y.	Bishop
Reward (Brown Monster)	a	Dick Bright et al.	Independence	Independence
Kern County				
Big Blue	b	Kerns Mines, Inc.	260 California St., San Francisco	Kernville
Cactus Queen	b	Cactus Mines Co.	1206 Pacific Mutual Bldg., Los Angeles	Rosamond
Golden Queen	a	Golden Queen Mining Co.	Mojave	Mojave
Standard Hill	a	Standard Hill Mines Co.	2 Pine St., San Francisco	Mojave
Tropico	a	Burton Bros., Inc.	Rosamond	Rosamond
Whitmore	b	James Ritchie	Mojave	Mojave
Yellow Aster	c	Anglo American Mining Corporation, Ltd.	206 Sansome St., San Francisco	Randsburg
Mariposa County				
Mount Gaines	a	Mount Gaines Mining Co.	Hornitos	Hornitos
Mono County				
Standard	a	Roseklip Mines Co.	Bodie	Bodie
Nevada County				
Empire Star et al.	a	Empire Star Mines Co., Ltd.	14 Wall St., New York, N. Y.	Grass Valley
Idaho Maryland	a	Idaho Maryland Mines Corporation	Box 1028, Grass Valley	Grass Valley
Lava Cap	a	Lava Cap Gold Mining Corporation	Box 780, Nevada City	Grass Valley

a. Lode gold mine. b. Gold-silver mine. c. Tailings dumps. d. Pocket. e. Dredge (bucketline). f. Drift mine. g. Hydraulic mine. h. Dragline operations. j. Copper-gold mine. k. Power shovel or dryland dredge. m. Lead mine. n. Suction dredge. p. Silver-lead-zinc. r. Tungsten mine.

Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

SILVER—Continued

Principal Silver Producers in California in 1942. (Not less than 2,000 ounces)

Mine	Type of mine	Operator	Address	Postoffice of mine
Orange County				
Silverado (Blue Light)	p	Blue Light Silver Mines Co.	508 Chapman Building, Fullerton	Fullerton
Placer County				
Alabama	a	Alabama California Gold Mines Co.	Box 488, Auburn	Penryn
Sacramento County				
Natomas	e	Natomas Company	Forum Bldg., Sacramento	Natoma
San Bernardino County				
Bagdad-Chase	a	Frank Royer	Red Mountain	Ludlow
Kelly	b	Frank Royer	Red Mountain	Red Mountain
Shasta County				
Iron Mountain	j	The Mountain Copper Co., Ltd.	216 Pine St., San Francisco	Matheson
Tuolumne County				
Eagle-Shawmut	b	Miller and Clemson	4800 Santa Fe Ave., Los Angeles	Chinese Camp

a. Lode gold mine. b. Gold-silver mine. c. Tailings dumps. d. Pocket. e. Dredge (bucketline). f. Drift mine. g. Hydraulic mine. h. Dragline operations. j. Copper-gold mine. k. Power shovel or dryland dredge. m. Lead mine. n. Suction dredge. p. Silver-lead-zinc. r. Tungsten mine.

SLATE

Operator	Product	Address	Location of quarry
El Dorado County			
Pacific Minerals Co., Ltd.	b, c	337 10th St., Richmond	Chili Bar

b. Granules. c. Flagging.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

SOAPSTONE AND TALC

Operator	Product	Address	Location of mine
El Dorado County			
Pacific Minerals Co., Ltd., Chas. S. Renwick, Jr.	a	337 10th St., Richmond	Shrub
Inyo County			
Blue Star Mines, Ltd.	b	810 S. Spring St., Los Angeles	Kingston Mountain
Death Valley Talc Co.	b	806 Trans America Bldg., Los Angeles	Furnace Creek
Monarch Talc Mines	b	649 S. Olive St., Los Angeles	Shoshone
Muroc Clay Co.	b	5525 Randolph St., Maywood	Shoshone
W. J. Quackenbush	b	917 Ronan Ave., Wilmington	
Palmer Development Co.	b	Box 301, Lone Pine	Lone Pine
Sierra Talc Co., Franklin Booth, Mgr.	b	428 Union League Bldg., Los Angeles	Keeler
White Mountain Talc Co., Wm. M. Bonham	b	Lone Pine	Lone Pine
San Bernardino County			
Sierra Talc Co.	b	500 Union League Bldg., Los Angeles	Silver Lake
Southern Calif. Minerals Co., W. S. Skeoch	b	320 Mission Rd., Los Angeles	Kingston Mountain
Western Talc Co.	b	1901 E. Slauson Ave., Los Angeles	Death Valley

a. Soapstone. b. Talc.

SODA

Operator	Product	Address	Location of plant
Imperial County			
C. D. Adams, Smith Salt-Cake Deposit	c	2073 N. San Antonio Ave., Pomona	Mecca
Inyo County			
Natural Soda Products Co.	a, d	405 Montgomery St., San Francisco	Keeler
Pacific Alkali Co.	a, d	1206 Pacific Mutual Bldg., Los Angeles	Bartlett
San Bernardino County			
American Potash & Chemical Co.	a, c	Trona	Trona
Chemical Mines Co., Irving E. Bush, Mgr.	c	1116 Pacific Mutual Bldg., Los Angeles	Dale Lake
Desert Chemical Co.	c	4031 Goodwin Ave., Los Angeles	Amboy
West End Chemical Co.	a	Latham Square Bldg., Oakland	West End

a. Soda ash. c. Salt cake. d. Trona.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

STONE, MISCELLANEOUS

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks, and sand and gravel. Crushed rock includes crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

NOTE.—The California State Highway Commission, the various counties, U. S. Forest Service and U. S. Bureau of Public Roads produce both crushed rock and sand and gravel in various places in the State used in construction and maintenance of highways, but not specified in this listing.

Operator	Product	Address	Location of pit or quarry
Alameda County			
Ariss-Knapp Co.	b	961 41st St., Oakland	
California Rock & Gravel Co.	a	1800 Hobart Bldg., San Francisco	Livermore
J. Catucci	b	1212 18th Ave., Oakland	Oakland
Easter Hill Properties Co.	b	First National Bank Bldg., Richmond	
Heafey-Moore Co., Leona Quarry	b	344 High St., Oakland	Oakland
Henry J. Kaiser Co.	a, b	1522 Latham Square Bldg., Oakland	Radum
Kemper Bros.	b	5998 Strabridge Ave., Hayward	Hayward
Leslie Salt Co.	b	310 Sansome St., San Francisco	Newark
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Eliot and Niles
Alfred W. Petersen	a	Box 943, Livermore	Livermore
A. W. Petersen	a	Box 110, Livermore	Livermore
Thos. B. Russell Quarry, T. B. Russell	b	1192 Russell Way, Hayward	Hayward
San Leandro Rock Co., Lake Chabot Quarry	b	2485 Washington St., San Leandro	Lake Chabot
Superior Rock Co.	b	Broadway and McAdams St., Oakland	Oakland
Amador County			
Charles Ayers	a	P.O. Box 266, Sutter Creek	Jackson
Butte County			
Bechtel-Kaiser Rock Co., R. J. Kennedy, Mgr.	a, b	Oroville	Oroville
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Oroville
A. Teichert & Son, Inc.	b	1846 37th St., Sacramento	Chico
Calaveras County			
Neilsen Gravel Plant, Att'n R. Nielsen	a	Box 14, San Andreas	San Andreas
Contra Costa County			
Antioch Asphalt Co.	a	Claremont Hotel, Berkeley	Antioch
Basalt Rock Co.	a	8th St., Napa	Antioch
Blake Bros., Anson Blake	b	204 Balboa Bldg., San Francisco	Point Richmond
Henry J. Kaiser Co.	a	1522 Latham Square Bldg., Oakland	Antioch and Upton
Stege Quarry, H & B Rock Co.	b	7360 Schmidt Lane, El Cerrito	El Cerrito
The Roberts Bros.	c	Pittsburg	Clayton
Silica Co. of Calif., Ltd.	c	Brentwood	Brentwood
El Dorado County			
Diamond Springs Lime Co.	b	Diamond Springs	Diamond Springs

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Fresno County			
Central Rock & Sand Co.	a, b	Sanger	Sanger
Grant-Pacific Rock Co.	a, b	Box 649, Fresno	El Prado
Carl Merk	a	North and Cherry Sts., Fresno	Fresno
Stewart & Nuss	a, b	410 Thorne St., Fresno	Herndon
Volpa Bros.	a	428 W. Whites Bridge, Fresno	Fresno
Glenn County			
E. B. Bishop	a	Box 325, Orland	Wyo
Southern Pacific Co.	a	65 Market St., San Francisco	Wyo
A. Teichert & Sons	b	1846 37th St., Sacramento	Willows
Humboldt County			
D. A. Boyd	a	R.F.D., Arcata	Arcata
Tom Hull	a	Eureka	Eureka
Northwestern Pacific R.R. Co., Wm. N. Neff, Gen. Sup't	a	Sausalito	Sequoia
Imperial County			
Nixon Pipe Yard	a	Seeley	Seeley
R. T. Pinner	a	Brawley	Brawley
W. M. Winn	a	Box 1136, Brawley	Brawley
Inyo County			
Inyo Marble Co.	d	726-732 E. 29th St., Los Angeles	Lone Pine
Kern County			
Bakersfield Rock and Gravel Co.	a, b	Box 395, Station A, Bakersfield	Bakersfield
Griffith Co.	b	Bakersfield	Bakersfield
C. W. Hartman	a, b	W. Oak St., Bakersfield	Bakersfield
Kern Rock Co., Ltd.	a, b	Box 1697, Bakersfield	Kern River
Lassen County			
Red River Lumber Co.	a	Westwood	Westwood
Los Angeles County			
Arrow Rock Co.	a	Box 155, Monrovia	Monrovia
A. T. & S. F. R.R., I. L. Hibbard, Gen. Mgr.	a	609 Kerckhoff Bldg., Los Angeles	Forbes
Guy F. Atkinson Co., et al.	b	Box 259, Long Beach	Santa Catalina
Azusa Rock & Sand Co.	a, b	Rural Delivery, Azusa	Azusa
Richard R. Ball	a	Box 96, Walteria	Walteria
Blue Diamond Corp., Ltd.	a	1650 S. Alameda St., Los Angeles	El Monte and Roscoe
Wm. J. Bonfield	g	2008 Laurel Canyon Rd., Los Angeles	Hollywood
Chandler Palos Verdes S. & G., L. Chandler	a, b	Lomita	Lomita
City Rock Co.	a, b	Box A, Sunland	Sunland
Coast Brick Co.	c	P.O. Box 326, Moneta	Moneta
Columbia Construction Co.	b	Box 259, Long Beach	Catalina Island
Consolidated Rock Products Co.	a, b	2730 S. Alameda St., Los Angeles	Los Angeles, Azusa, Roscoe and Vernon

a. Sand and gravel. b. Crushed rock (macadam, ballast, rubble, rip-rap, etc.). c. Molding sand. d. Granules for roofing, terrazzo. e. Slag and volcanic cinder. f. Tube-mill pebbles. g. Decomposed granite.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

STONE, MISCELLANEOUS—Continued

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks, and sand and gravel. Crushed rock includes crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

Operator	Product	Address	Location of pit or quarry
Los Angeles County—Continued			
Ducey & Atwood Rock Co., R. K. Atwood, Pres.	a, b	Box 194, East Pasadena	East Pasadena
W. F. Glasser, Inc.	b	713 N. Sepulveda, Brentwood Heights, Los Angeles	Brentwood Heights
Graham Bros.	a, b	3245 Fowler Ave., Los Angeles	El Monte and Roscoe
Granite Material Co.	g	8200 Tujunga Ave., North Hollywood	Roscoe
John D. Gregg	a, b	Box 110, Whittier	Whittier
Lindauer Corp.	a	Box 208, La Habra	La Habra
Los Angeles Decomposed Granite Co.	g	2171 W. Washington, Los Angeles	Los Angeles
Manning Bros. Rock & Sand Co.	a, b	Irwindale	Irwindale
Moe Bros.	g	8170 Lauremont Dr., Hollywood	Laurel Canyon
Owl Rock Products Co.	a	P.O. Box 187, Monrovia	Monrovia
Pacific Rock & Gravel Co.	a, b	800 Lane Mortgage Bldg., 208 W. 8th St., Los Angeles	
Reynolds Crushed Gravel, Inc.	g	914 N. Humphreys Ave., Los Angeles	Los Angeles
Security Material Co.	b	1131 N. Highland Ave., Los Angeles	Los Angeles
Edwin Sidebotham & Sons, Inc., Sidebotham Sand Plant	a	McFarland and L Sts., Wilmington	Lomita
Marin County			
Hutchison Co.	b	329 17th St., Oakland	San Quentin
Marin Gravel Co.	a	Point Reyes	Point Reyes
Mariposa County			
D. H. Miles	b	Mariposa	Mariposa
Yosemite National Park	a, b	Yosemite	Yosemite Nat'l Park
Mendocino County			
John Freitas	a	Ukiah	Ukiah
Merced County			
Bair Creek Sand & Gravel Co., J. W. Huffman	a	Merced	Merced
C. V. Jones	a	Rt. 1, Box 132, Winton	Winton
Los Banos Gravel Co.	a	Rainbow Auto Court, Los Banos	Los Banos
Modoc County			
Great Northern Railway, A. E. Knight, Supt.	e	Klamath Falls, Ore.	Mammoth
Moyer Gravel Co.	a	P.O. Box 25, Alturas	Alturas
Monterey County			
Del Monte Properties, C. S. Olmsted	g	Del Monte	Del Monte
M. J. Murphy	a	Monte Verde and 9th Sts., Carmel	Carmel
Pacific Coast Aggregates, Inc.	a	85 2d St., San Francisco	Lapis and Prattco

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Napa County			
Basalt Rock Co.	b	8th St., Napa	Napa
Juarez Quarry, M. G. Reidenbach	b	Napa	Napa
Harold Smith	a	St. Helena	St. Helena
Orange County			
Geo. T. Calhoun	a	P.O. Box 1741, Santa Ana	Garden Grove
California Rock Co.	a	Rural Delivery, Orange	Orange
Consolidated Rock Products Co.	a	2730 S. Alameda St., Los Angeles	Fullerton and Orange
Fowler Sand & Gravel Co.	a	1178 S. Flower St., Santa Ana	Santa Ana
Foster Sand & Gravel Co.	a	524 W. Commonwealth, Fullerton	
V. J. Frye Foundry Supplies	c	1302 N. Flower St., Santa Ana	Santa Ana
Graham Bros.	a	3425 Fowler Ave., Los Angeles	San Juan Capistrano
Reynolds Gravel Service	g	Box 499, Orange	Orange
B. A. Stoffel	a	Anaheim	Anaheim
Placer County			
Pacific Gas & Electric Co.	a	245 Market St., San Francisco	Dutch Flat
Union Granite Co., Ruhkala Bros.	b	Rocklin	Rocklin
Riverside County			
A. T. & S. F. R.R. Co., I. L. Hibbard, Gen. Mgr.	b	609 Kerckhoff Bldg., Los Angeles	Box Springs
Guy F. Atkinson Co., George Pollock Co.	b	P.O. Box 259, Long Beach	Riverside
Emil Johnson	b	Perris	Perris
Kumpe-Hauser Corp., Ltd., Ormand Quarry	b	Box 827, Riverside	Bly Junction
Kuster & Waterburg	a	Corona	Corona
City of Riverside	b	Riverside	Riverside
San Gorgonio Rock Co.	a, b	Banning	Banning
Service Rock Co.	a	Box 309, Riverside	Riverside
Transit Mixed Concrete Co.	a, b	3464 E. Foothill Blvd., Pasadena	Corona
P. J. Weisel, Industrial Sands	a, c	La Habra	Corona
Sacramento County			
American River Sand & Gravel Co.	a	Box 156, Perkins	Perkins
Brighton Sand & Gravel Co.	a, b	P.O. Box 2604, Sacramento	Sacramento
Canon & Co.	c	Box 281, Sacramento	Ben Ali
Del Paso Rock Products Co.	a, b	Rt. 5, Box 1200, Sacramento	Del Paso
Folsom State Prison	a, b	Represa	Represa
Mucke Sand & Gravel Co.	a, b	1433 57th St., Sacramento	Mayhew
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Fair Oaks, Mayhew and American River
Perkins Gravel Co.	a, b	Perkins	Perkins
Robert Powell & Co.	a	Box 815, Sacramento	American River
San Benito County			
Granite Rock Co.	b	Drawer M., Watsonville	Logan

a. Sand and gravel. b. Crushed rock (macadam, ballast, rubble, rip-rap, etc.). c. Molding sand. d. Granules for roofing, terrazzo. e. Slag and volcanic cinder. f. Tube-mill pebbles. g. Decomposed granite.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

STONE, MISCELLANEOUS—Continued

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks, and sand and gravel. Crushed rock includes crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

Operator	Product	Address	Location of pit or quarry
San Bernardino County			
A. T. & S. F. R.R.	a, b	600 Kerckhoff Bldg., Los Angeles	Gale
Columbia Construction Co.	b	1300 W. 7th St., Los Angeles	Declezville
Concrete Rock & Sand Co.	a	899 La Cadena St., Colton	Colton
Consolidated Rock Products Co.	a, b	2730 S. Alameda St., Los Angeles	
Geo. Herz & Co.	a	Base Line & Lytle Sts., San Bernardino	San Bernardino
Holiday Rock Co.	a, b	Upland	Upland
Johnson Fourth Street Rock Crusher	a, b	305 Lytle St., San Bernardino	San Bernardino
Palm Springs Builders' Supply Co.	a, b	Whitewater	Palm Springs
Redlands Gravel Co.	a, b	Redlands	Redlands
San Bernardino Rock & Gravel Co.	a, b	Box 249, San Bernardino	San Bernardino
Sharp & Fellows Cons. Co.	b	Central Bldg., Los Angeles	Oro Grande
Southern Counties Rock Co.	b	P.O. Box 127, Monrovia	Yermo
Triangle Rock & Gravel Co.	a, b	San Bernardino	San Bernardino
San Diego County			
Billings Truck Co.	a, b	1950 Main St., San Diego	Chula Vista
Calaveras Materials Co.	b	Oceanside	Oceanside
Canyon Rock Co.	a, b	Box F, Hillcrest Sta., San Diego	San Diego
Claudell & Johnson	a	Box 246, Hillcrest Sta., San Diego	Mission Valley
Crystal Silica Co.	a, c, h	717 E. 61st St., Los Angeles	Oceanside
Daley Corp., Geo. Dailey	a	4430 Boundary St., San Diego	San Diego
Elvira M. Hubbard	c	406 W. Nutmeg St., San Diego	San Diego
John T. Momand	f	Carlsbad	Carlsbad
Nelson & Sloan	a	Box 832, Chula Vista	Chula Vista
Oceanside Rock & Sand Co.	a, f	Oceanside	Oceanside
D. M. Sebastian	a	Mission Valley, San Diego	Mission Valley
San Francisco County			
Mission Quarry Co.	b	210 Balboa Bldg., San Francisco	San Francisco
San Joaquin County			
Frank B. Marks & Sons	a, b	Newman	Newman
Mokelumne Sand & Gravel Co., D. M. Dyer	a	527 E. Lodi Ave., Lodi	Lodi
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Riverbank
Elmer J. Warner	a	1103 Sycamore, Stockton	Stockton
San Luis Obispo County			
Guiton Molding Sand, Harold E. Guiton	c	Oceano	Oceano
Harold B. Roselip	a, b	615 Grand Ave., San Luis Obispo	Atascadero

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:05 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

San Mateo County			
Canadas Quarry, California Paving Co.	b	363 N. El Dorado St., San Mateo	Half Moon Bay
Golden West Quarry	b	Geneva and Santos Sts., San Francisco	Colma
Holy Cross Cemetery	b	Colma	Colma
Industrial Mineral Products, J. W. Jessiman	c	230 7th St., San Francisco	South San Francisco
Rockaway Quarry, Inc.	b	1111 Mills Tower, San Francisco	Rockaway Beach
Santa Barbara County			
Gates Gravel Plant, Frank H. Gates	a	Santa Maria	Sisquoc
H. G. Iliff & Son	a	Santa Maria	Santa Maria
Southern Pacific R.R. Co., Ass't Chief Engineer	b	Southern Pacific Bldg., San Francisco	Arlight
Santa Clara County			
Carroll Gravel Pit, R. D. Carroll	a	R.F.D. 14, Box 310A, San Jose	San Jose
Chas. W. Hamilton	a	Senter Rd., San Jose	San Jose
Los Gatos Sand and Gravel Co.	a	Los Gatos	Los Gatos
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Coyote and Campbell
A. J. Raisch	a	900 W. San Carlos St., San Jose	San Jose
Rhodes & Robinson, Stanford Quarry	b	Box 325, Palo Alto	Palo Alto
Western Gravel Corp.	a	Box 855, Campbell	Campbell
Santa Cruz County			
Henry J. Kaiser Co.	a	1522 Latham Square Bldg., Oakland	Olympia
Pacific Coast Aggregates, Inc.	a	85 2d St., San Francisco	Olympia
Pacific Limestone Products Co.	b	Santa Cruz	Santa Cruz
Shasta County			
Columbia Construction Co., Henry J. Kaiser Co.	a	Latham Square Bldg., Oakland	Cottonwood
Diestelhorst Gravel Plant, Chas. Diestelhor.t, Jr.	a, b	1078 West St., Redding	Redding
Hein Bros. Basalt Rock Co.	a	Petaluma	Redding
Pacific Gas & Electric Co., Att'n W. G. Vincent	a, b	245 Market St., San Francisco	
City of Redding	a, b	Redding	Redding
Southern Pacific R.R. Co., Ass't Chief Engineer	e	Southern Pacific Bldg., San Francisco	Kennett
A. Teichert & Son, Inc.	b	1846 37th St., Sacramento	Redding
Siskiyou County			
James Baker	a	Klamath Falls, Ore.	Mt. Hebron
A. E. Kottinger	a	Mt. Shasta	Mt. Shasta
Southern Pacific R.R. Co., Ass't Chief Engineer	e	Southern Pacific Bldg., San Francisco	Kegg
A. Young	b	345 N. Main St., Yreka	Yreka
Solano County			
J. M. Nelson, Cordelia Quarry	b	Cordelia	Cordelia
Red Rock Quarry, Ltd.	b	Box 671, Vallejo	Vallejo
Sonoma County			
Basalt Rock Co.	a	8th St., Napa	Healdsburg
Hein Bros. Basalt Rock Co., Mark Hein, Pres.	b	Petaluma	Petaluma
Macco-Chase Construction Co.	b	815 N. Parmont Blvd., Clearwater	
Stony Point Quarry, W. A. Wilson	b	Petaluma, Star Route	Stony Point

a. Sand and gravel. b. Crushed rock (macadam, ballast, rubble, rip-rap, etc.) c. Molding sand. d. Granules for roofing, terrazzo. e. Slag and volcanic cinder. f. Tube-mill pebbles. g. Decomposed granite. h. Filter and blast sand.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

STONE, MISCELLANEOUS—Continued

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks, and sand and gravel. Crushed rock includes crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

Operator	Product	Address	Location of pit or quarry
Stanislaus County			
A. T. & S. F. Railway Co.		560 S. Main St., Los Angeles	
Tony Francisco	a	Crows Landing	Crows Landing
Gravel Products Co.	a	Hughson	Hughson
Wes Haslan	a	Oakdale	Oakdale
Hughson Gravel Co.	a	301 N. Santa Cruz Ave., Modesto	Hughson
O. A. Kauffman	a	803 1st St., Modesto	Modesto
Frank B. Marks & Sons	a	Newman	Newman
Oakdale Irrigation Dist.	a	Oakdale	Oakdale
Putnam Sand & Gravel Co.	a	Box 486, Modesto	Modesto
J. P. Scanlon, Scanlon Gravel Pit	a	Patterson	Crows Landing
Chas. Warner	a	Modesto	Modesto
Trinity County			
Northwestern Pacific R.R. Co., Wm. N. Neff, Gen. Sup't	b	Sausalito	Island Mountain
Tulare County			
Dinuba Cement Co.	a	Dinuba	Dinuba
O. C. Jeffers	a	1032 River Rd., Porterville	Porterville
Porterville Cement Pipe Co.	a	Box 396, Porterville	Porterville
Tuolumne County			
Beerman & Jones	b	Sonora	Soulsbyville
Ventura County			
Guy F. Atkinson Co. & George Pollock Co.	a, b	P.O. Box 259, Long Beach	Broome Ranch, Conejo
Montalvo Rock Co.	a	Box 188, Montalvo	Montalvo
Santa Paula Rock Co.	a, b	Box 671, Santa Paula	Santa Paula
Saticoy Rock Products Co.	a, b	Ventura	Saticoy-Ventura
J. S. Toler	c	1257 Poli St., Ventura	Ventura
A. N. Vela	a	432 N. Oak St., Santa Paula	Santa Paula
Yolo County			
Leroy Kerr	a	Yolo	Yolo
Joe Schwarzgruber	a	Woodland	Woodland
George Summers	a	Woodland	Woodland
A. Teichert & Sons, Inc.	b	1846 37th St., Sacramento	Woodland
Yolo Gravel Co.	a	Box 7, Yolo	Yolo
Yuba County			
Hemstreet & Bell	a, b	501 11th St., Marysville	Marysville
Pacific Coast Aggregates, Inc.	a	85 2d St., San Francisco	Marysville
Yuba River Sand Co.	a	Marysville	Marysville

a. Sand and gravel. b. Crushed rock (macadam, ballast, rubble, rip-rap, etc.). c. Molding sand. d. Granules for roofing, terrazzo. e. Slag and volcanic cinder. f. Tube-mill pebbles. g. Decomposed granite.

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

STRONTIUM

Operator	Address	Location of mine
Imperial County		
Pan-Chemical Co., John A. Stevens	1396 N. Harvard St., Claremont	Fish Mts.
San Bernardino County		
E. I. DuPont de Nemours & Co	DuPont Bldg., Wilmington, Dela	Argus
Wesley N. Rowe	919 E. Valley Blvd., Rosamond	Lavic

SULPHUR

Operator	Address	Location of mine
Inyo County		
Pacific Sulphur Co	433 S. Spring St., Los Angeles	Last Chance Mts.

TITANIUM

Operator	Address	Location of mine
Los Angeles County		
Mrs. Harvey R. Smith	421 S. Harvard Blvd., Los Angeles	Hermosa Beach

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

TUNGSTEN

Principal Tungsten Properties in California During 1942

Mine	Operator	Address	Location of mine
Fresno County			
Garnet	P. G. Armstrong, et al.	Auberry	Auberry
Garnet Dyke	Sheridan, Bennett, & Kidder	Kings River Hatchery	Kings River
Houghton Bros.	Houghton Bros.	Rt. 2, Box 684, Sanger	Kings River
Kings River	B. Bazuik	717 Voorman, Fresno	Kings River
	Kings River Mines, L. O. Gillice	600 Rowell Bldg., Fresno	Kings River
Quigley	Perry Root	Auberry	Kings River
Inyo County			
Crawford Dep.	Tungsten Corp., P. N. Stevens	6233 Hollywood Blvd., Los Angeles	Bishop
Jack Rabbit	El Diablo Mining Co., H. O. Johanson	Box 567, Bishop	Bishop
Marble	Robert W. Kelso	Bishop	Bishop
Panaminas	Panaminas Inc., F. C. Buckland, Gen. Mgr.	Box 734, Bishop	Bishop
Pine Creek	United States Vanadium Corp.	30 E. 42d St., New York, N. Y.	Bishop
Round Valley	California Tungsten Mining & Milling Co., N. C. McAldo	Rt. 2, Bishop	Bishop
St. Charles et al.	Pacific Tungsten Co.	9730 Wilshire Blvd., Beverly Hills	Darwin
Tungsten Blue	Bishop Tungsten Corp.	Box 395, Bishop	Bishop
Kern County			
Bason View	M. J. Gusty	Bodfish	Havilah
	Sam Huckabay	Rt. 4, Box 319, Bakersfield	Glennville
Mountain View	Bell & Durnal	259 Haberfelde Bldg., Bakersfield	Caliente
Pine Tree	Carl H. Claussenius	P.O. Box 797, Tehachapi	Tehachapi
	Ray Ruthledge	Glennville	Glennville
Tungsten Buck	R. L. Coughran	Isabella	Isabella
Tungsten Chief	T. J. McKee, et al.	Caliente	Caliente
Tungsten Hill	E. E. Lambert & M. T. Smith	Havilah via Caliente	Havilah
Mono County			
Black Rock	A. E., S. H. & John Beauregard	Bishop	Benton
Scheelore	H. A. Van Loon	Bishop	McGee Creek
San Bernardino County			
Atolia	Atolia Mining Co.	1022 Crocker Bldg., San Francisco	Atolia
Bernice	Vaughn Maynard	R.F.D. 4, Box 30, Santa Ana	Baker
El Mirage	Mine Development Co.	Box 545, Mojave	Adelanto
	General Industries Corp.	530 W. 6th St., Los Angeles	Red Mountain
	William W. Hartman	1230 E. 109th St., Los Angeles	Cima
Monarch Rand	Monarch Rand Mining Co.	Box 366, Randsburg	Randsburg
Spud Patch Placers	Hoefling Bros.	1820 E St., Sacramento	Atolia

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Tulare County			
Carver	A. M. Donnelly	Box 45, Johnsondale	
Will Gill Ranch	Tulare Co. Tungsten Mines	725 Washington Bldg., 311 S. Spring St., Los Angeles	Lindsay
Tungstore	Tungstore Mines	929 American Ave., Long Beach	Posey
	Yokohl Valley Tungsten Mining Co.	Box 474, Exeter	Exeter
Tuolumne County			
	Tuolumne Tungsten Mine	Twain Harte	Twain Harte

ZINC

Principal Zinc Producers in California in 1942. (*Not less than 10,000 pounds.*)

Mine	Operator	Address	Post office of mine
Inyo County			
Colorado	Combined Metals Reduction Co.	Box 84A, Lone Pine	Panamint Springs
Honolulu	Southwest Lead & Zinc Co.	433 S. Spring St., Los Angeles	Trona
Leary	Desert Miners	Lone Pine	Keeler
San Bernardino County			
Carbonate King	W. F. Huston	Mountain Pass via Nipton	Nipton

Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 16:05 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

SMELTERS, CUSTOM MILLS, ORE AND METAL BUYERS

Reporting Purchase of California Metals (except Gold and Silver) Produced in 1941

Name	Address	Location of plant	Metals reported purchased
American Smelting & Ref. Co.	120 Broadway, New York, N. Y.	Garfield, Utah	Copper, Lead
American Smelting & Ref. Co.	120 Broadway, New York, N. Y.	Hayden, Ariz.	Copper
American Smelting & Ref. Co.	120 Broadway, New York, N. Y.	Murray, Utah	Lead, copper
American Smelting & Ref. Co.	405 Montgomery St., San Francisco	Selby, Calif.	Copper, Lead
American Smelting & Ref. Co.	120 Broadway, New York, N. Y.	Tacoma, Wash.	Copper, Lead
C. L. Ach	2309 E. 8th St., Los Angeles	Los Angeles	Tungsten
Bethlehem Steel Co.	20th and Illinois Sts., San Francisco	San Francisco	Chromite
Bradley & Ekstrom	320 Market St., San Francisco	San Francisco	Chromite, Manganese, Iron
Coast Chemical Division F. W. Berk & Co., Inc.	Sharon Bldg., San Francisco	San Francisco	Quicksilver
Colorado Fuel & Iron Co.	225 Canal St., Pueblo, Colo.	Pueblo, Colo.	Manganese Ore
General Dry Batteries, Inc.	13000 Athens Ave., Cleveland, Ohio	Cleveland, Ohio	Manganese
H. W. Gould & Co.	Mills Bldg., San Francisco	San Francisco	Quicksilver
The Harshaw Chemical Co.	Box 37, El Segundo	El Segundo	Antimony and Quicksilver
International Smelting & Ref. Co.	Tooele, Utah	Tooele, Utah	Copper, Lead, Zinc
Magna Copper Co.	Superior, Ariz.	Superior, Ariz.	Copper
Medford Chemical Co.	1026 Santa Fe, Los Angeles	Los Angeles	Quicksilver
Mercantile Metals & Ore Corp.	60 Wall St., New York, N. Y.	New York	Quicksilver
Metals Reserve Co.	Washington, D. C.	Various stock piles	Chromite, Manganese Ore, Quicksilver, Tungsten Ore
Ore, Metals & Engineering Corp.	112 Market St., San Francisco	San Francisco	Chromite
Pacific Vegetable Oil Co., Bernard T. Rocca	62 Townsend St., San Francisco	San Francisco	Quicksilver
Pacific Zinc Oxide Co.	216 Pine St., San Francisco	Richmond	Zinc
Quicksilver Producers Ass'n, Irving Ballard, Sec'y	407 Sansome St., San Francisco	San Francisco	Quicksilver
U. S. Smelting, Refining & Mining Co.	Newhouse Bldg., Salt Lake City, Utah	Midvale, Utah	Copper, Lead, Zinc
U. S. Vanadium Corp.	114 Sansome St., San Francisco	San Francisco	Chromite
West Coast Tungsten Co.	9730 Wilshire Blvd., Beverly Hills	Darwin	Tungsten
Western Gold & Platinum Works	589 Bryant St., San Francisco	San Francisco	Platinum
Wildberg Bros. Smelting & Ref. Co.	742 Market St., San Francisco	San Francisco	Platinum

Digitized by Google
Original from THE OHIO STATE UNIVERSITY

APPENDIX

PUBLIC RESOURCES CODE

An act to establish a Public Resources Code, thereby consolidating and revising the law relating to natural resources, the conservation, utilization, and supervision thereof, and matters incidental thereto, and to repeal certain acts and parts of acts specified herein.

Chapter 93 (Stats. 1939.)

The people of the State of California do enact as follows:

GENERAL PROVISIONS

1. This act shall be known as the Public Resources Code.

2. The provisions of this code, in so far as they are substantially the same as existing provisions relating to the same subject matter shall be construed as restatements and continuations thereof and not as new enactments.

3. All persons who, at the time this code goes into effect, hold office under any of the acts repealed by this code, which offices are continued by this code, continue to hold the same according to the former tenure thereof.

4. No action or proceeding commenced before this code takes effect, and no right accrued, is affected by the provisions of this code, but all procedure thereafter taken therein shall conform to the provisions of this code so far as possible.

5. Unless the context otherwise requires, the general provisions hereinafter set forth shall govern the construction of this code.

6. Division, part, chapter, article, and section headings contained herein shall not be deemed to govern, limit, modify or in any manner affect the scope, meaning, or intent of the provisions of any division, part, chapter, article, or section hereof.

7. Whenever, by the provisions of this code, an administrative power is granted to a public officer or a duty imposed upon such officer, the power may be exercised or the duty performed by a deputy of the officer or by a person authorized pursuant to law.

8. Writing includes any form of recorded message capable of comprehension by ordinary visual means. Whenever any notice, report, statement or record is required by this code, it shall be made in writing in the English language.

9. Whenever any reference is made to any portion of this code or of any other law of this State, such reference shall apply to all amendments and additions thereto now or hereafter made.

10. "Section" means a section of this code unless some other statute is specifically mentioned.

11. The present tense includes the past and future tenses; and the future the present.

12. The masculine gender includes the feminine and neuter.

13. The singular number includes the plural, and the plural the singular.

14. "County" includes "city and county."

15. "Shall" is mandatory and "may" is permissive.

16. "Oath" includes affirmation.

17. "Signature" or "subscription" includes mark when the signer or subscriber can not write, such signer's or subscriber's name being written near the mark by a witness who writes his own name near the signer's or subscriber's name; but a signature or subscription by mark can be acknowledged or can serve as a signature or subscription to a sworn statement only when two witnesses so sign their own names thereto.

18. If any provision of this code, or the application thereof to any person or circumstances, is held invalid the remainder of the code, and the application of its provisions to the other persons or circumstances, shall not be affected thereby.

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

DIVISION 1. THE DEPARTMENT OF NATURAL RESOURCES

501. There is in the State government a Department of Natural Resources. The department shall be conducted under the control of an executive officer known as the Director of Natural Resources. The director shall be appointed by and hold office at the pleasure of the Governor and shall receive a salary of six thousand dollars a year.

502. Except as in this division otherwise provided, the provisions of Article 2, Chapter 3, Title 1, Part 3 of the Political Code shall govern and apply to the conduct of the Department of Natural Resources in every respect the same as if such provisions were herein set forth at length, and wherever in that article the term "head of the department" or similar designation occurs, it shall for the purposes of this division mean the Director of Natural Resources.

503. For the purposes of administration the department shall be organized by the director, subject to the approval of the Governor, in such manner as he deems necessary properly to segregate and conduct the work of the department. The director may appoint, in accordance with the civil service and other provisions of law, such deputies, officers, and other expert and clerical assistants as may be necessary.

504. The work of the department shall be divided into at least four divisions, known as Division of Forestry, the Division of Parks, The Division of Fish and Game, and The Division of Mines.

505. The Division of Forestry shall be administered through a chief who shall be known as the State Forester. He shall be a technically trained forester, appointed by the director upon nomination by the State Board of Forestry. General policies for the guidance of the Division of Forestry shall be determined by a State Board of Forestry which shall consist of seven members appointed by and holding office at the pleasure of the Governor. Of the seven members one shall be familiar with the pine timber industry, one with the redwood industry, one with live stock industry, one with general agriculture, and one with the problems of water conservation.

506. The Division of Parks shall be administered through a chief who shall be appointed by the director upon nomination by the State Park Commission. General policies for the administration of the State park system shall be determined by the State Park Commission which shall consist of five members appointed by and holding office at the pleasure of the Governor.

507. The Division of Mines shall be administered through a chief who shall be known as the State Mineralogist. He shall be a technically trained mining engineer, appointed by the director upon nomination by the State Mining Board. General policies for the guidance of the Division of Mines shall be determined by a State Mining Board, which shall consist of five members appointed by and holding office at the pleasure of the Governor.

508. The Division of the Department of Natural Resources for the supervision of oil and gas shall be in charge of a chief, known as the State Oil and Gas Supervisor.

509. The salaries of the chiefs of the Divisions of Forestry and Parks shall be fixed by the director with the approval of the Governor. The director and the chief of each division, before entering upon his duties, shall execute and deliver to the State an official bond in the sum of twenty-five thousand dollars conditioned upon the faithful performance of his duties.

510. The members of the Board of Forestry and the State Park Commission shall serve without compensation, but shall be entitled to their actual necessary expenses incurred in the performance of their duties.

512. The Department of Natural Resources may expend the money in any appropriation or in any special fund in the State treasury made available by law for the administration of the statutes the administration of which is committed to the department, or for the use, support, or maintenance of any board, bureau, commission, department, office, or officer whose duties, powers, and functions have been transferred to and conferred upon the department. Such expenditures by the department shall be made in accordance with law in carrying out the purposes for which the appropriations were made or the special funds created.

513. The department shall have possession and control of all records, books, papers, offices, equipment, supplies, moneys, funds, appropriations, land and other

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

property, real or personal held for the benefit or use of all bodies, offices, and officers whose duties, powers, and functions have been transferred to and conferred upon the department.

514. Nothing in this code is intended to supersede, modify or change the effect of the enactment of section 373g of the Political Code, and wherever in this code reference is made to any officer or agency of the Department of Natural Resources, it is made in the sense and with the same legal effect as was attributable thereto in the statute whence derived and which would continue to be so attributable but for the adoption of this code.

DIVISION 2. MINES AND MINING

CHAPTER 1. DEFINITIONS

2001. Unless the context otherwise requires, the definitions hereinafter set forth shall govern the construction of Division 2 of this code.

2002. "Department" in reference to the government of this State, means the Department of Natural Resources.

2003. "Division" in reference to the government of this State, means the Division of Mines in the Department of Natural Resources.

2004. "Person" includes any individual, firm, association, corporation, or any other group or combination acting as a unit.

CHAPTER 2. THE DIVISION OF MINES

2200. For the purposes of this chapter "mine" includes all mineral bearing properties of whatever kind or character, whether underground, quarry, pit, well, spring or other source from which any mineral substance is or may be obtained. "Mineral" for the purposes of this chapter includes all mineral products both metallic and nonmetallic, solid, liquid or gaseous, and mineral waters of whatever kind or character.

2201. The State Mineralogist shall employ competent geologists, field assistants, qualified specialists, and office employees when necessary in the execution of the plans and operations of the division under this chapter and shall fix their compensation.

2202. The State Mineralogist shall maintain offices, and a museum, library, and laboratory in San Francisco for the purposes provided in this chapter.

2203. The State Mineralogist shall make a biennial report to the Governor on or before the fifteenth day of September next preceding the regular session of the Legislature.

2204. The State Mineralogist may receive on behalf of this State, for the use and benefit of the division, gifts, bequests, devices, and legacies of real or other property and may use the same in accordance with the wishes of the donors. If no instructions are given by the donors, the State Mineralogist shall manage, use, and dispose of the gifts, bequests, and legacies for the best interests of the division and in such manner as he may deem proper.

2205. The State Mineralogist shall:

(a) Make, facilitate, and encourage special studies of the mineral resources and mineral industries of the State.

(b) Collect statistics concerning the occurrence and production of the economically important minerals and the methods pursued in making their valuable constituents available for commercial use.

(c) Make a collection of typical geological and mineralogical specimens, especially those of economic and commercial importance such collection constituting the museum of the division.

(d) Provide a library of books, reports, and drawings bearing upon the mineral industries, the sciences of mineralogy and geology, and the arts of mining and metallurgy, such library constituting the library of the division.

(e) Make a collection of models, drawings, and descriptions of the mechanical appliances used in mining and metallurgical processes.

(f) Preserve and so maintain such collections and library as to make them available for reference and examination, and open to public inspection at reasonable hours.

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

(g) Maintain, in effect, a bureau of information concerning the mineral industry of this State to consist of such collections and library, and arrange, classify, catalogue, and index the data therein contained, in a manner to make the information available to those desiring it.

(h) Issue from time to time such bulletins as he may deem advisable concerning the statistics and technology of the mineral industries of this State.

2206. The State Mineralogist may prepare a special collection of ores and minerals of California to be sent to or used at any world's fair or exposition in order to display the mineral wealth of the State.

2207. The owner, lessor, lessee, agent, manager, or other person in charge of any mine of whatever kind or character within the State shall forward to the State Mineralogist, upon his request, at his office, not later than the thirty-first day of March in each year, a detailed report upon forms which will be furnished showing the character of the mine, the number of men employed, the method of working the mine and the general condition thereof, and the total mineral production for the past year. He shall also furnish any additional information relative to such mine that the State Mineralogist may from time to time require for the proper discharge of his official duties. Any such person who fails to comply with the provisions of this section is guilty of a misdemeanor.*

2208. The State Mineralogist or a qualified assistant may at any time enter or examine any and all mines, quarries, wells, mills, reduction works, refining works, and other mineral properties or working plants in this State in order to gather data to comply with the provisions of this chapter.

2209. The State Mineralogist may fix a price upon and dispose of to the public all publications of the division, including reports, bulletins, maps, registers, or other publications. The price shall approximate the cost of publication and distribution. He may also furnish the publications of the division to public libraries without cost and may exchange publications with geological surveys, scientific societies, and other like bodies.

2210. All money received by the division from sales of publications issued by the division shall be deposited at least once each month in the State treasury to the credit of the Division of Mines revolving printing fund, which fund is continued in existence. This fund is appropriated for the use of the division, in addition to such other funds as may be appropriated, for the printing and publishing of reports, bulletins, and maps issued by the division. The State Controller may require financial reports from the division or any officer thereof.

(Added by Stats. 1939, Ch. 96, as part of codification.)

---

* Sec. 19 of the Penal Code of California provides: "Except in cases where a different punishment is prescribed by this code, every offense declared to be a misdemeanor is punishable by imprisonment in a county jail not exceeding six months, or by a fine not exceeding five hundred dollars, or by both."

Generated on 2024-09-24 16:05 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

PUBLICATIONS OF THE DIVISION OF MINES

During the past sixty-three years, in carrying out the provisions of the organic act creating the former California State Mining Bureau, there have been published many reports, bulletins and maps which go to make up a library of detailed information on the mineral industry of the State, a large part of which could not be duplicated from any other source.

One feature that has added to the popularity of the publications is that many of them have been distributed without cost to the public, and even the more elaborate ones have been sold at a price which barely covers the cost of printing.

Owing to the fact that funds for advancing the work of this department have usually been limited, the reports and bulletins mentioned are printed in limited editions many of which are now entirely exhausted.

Copies of such publications are available for reference, however, in the offices of the Division of Mines, in the Ferry Building, San Francisco; State Building, Los Angeles; State Office Building, Sacramento; Redding; and Division of Oil and Gas at Santa Barbara, Santa Paula, Taft, Bakersfield, Coalinga. They may also be found in many public, private and technical libraries in California and other states and foreign countries.

A catalog of all publications from 1880 to 1917, giving a synopsis of their contents, is issued as Bulletin No. 77.

Publications in stock may be obtained postpaid by addressing the San Francisco, Los Angeles or Sacramento offices and enclosing the requisite amount.

Remittances of stamps in an amount not to exceed 26 cents, currency or coin will be accepted at sender's risk. Payment is preferred in the form of money orders.

Money orders should be made payable to the Division of Mines.

Write for latest revised price list.

NOTE.—The Division of Mines frequently receives requests for some of the early Reports and Bulletins now out of print, and it will be appreciated if parties having such publications and wishing to dispose of them will advise this office.

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

REPORTS

Asterisks (**) indicate the publication is out of print.	Price (including postage and sales tax)
**First Annual Report of the State Mineralogist, 1880, 43 pp. Henry G. Hanks	----
**Second Annual Report of the State Mineralogist, 1882, 514 pp., 4 illustrations, 1 map. Henry G. Hanks	----
**Third Annual Report of the State Mineralogist, 1883, 111 pp., 21 illustrations. Henry G. Hanks	----
**Fourth Annual Report of the State Mineralogist, 1884, 410 pp., 7 illustrations. Henry G. Hanks	----
**Fifth Annual Report of the State Mineralogist, 1885, 234 pp., 15 illustrations, 1 geological map. Henry G. Hanks	----
Sixth Annual Report of the State Mineralogist, Part I, 1886, 145 pp., 3 illustrations, 1 map. Henry G. Hanks—Price $0.75, sales tax $0.02	$0.77
Part II, 1887, 222 pp., 36 illustrations. William Irelan, Jr.—Price $0.75, sales tax $0.02	.77
**Seventh Annual Report of the State Mineralogist, 1887, 315 pp. William Irelan, Jr.	----
**Eighth Annual Report of the State Mineralogist, 1888, 948 pp., 122 illustrations. William Irelan, Jr.	----
**Ninth Annual Report of the State Mineralogist, 1889, 352 pp., 57 illustrations, 2 maps. William Irelan, Jr.	----
**Tenth Annual Report of the State Mineralogist, 1890, 983 pp., 179 illustrations, 10 maps. William Irelan, Jr.	----
Eleventh Report (First Biennial) of the State Mineralogist, for the two years ending September 15, 1892, 612 pp., 73 illustrations, 4 maps. William Irelan, Jr.—Price $1.50, sales tax $0.04	1.54
**Twelfth Report (Second Biennial) of the State Mineralogist, for the two years ending September 15, 1894, 541 pp., 101 illustrations, 5 maps. J. J. Crawford	----
**Thirteenth Report (Third Biennial) of the State Mineralogist, for the two years ending September 15, 1896, 726 pp., 93 illustrations, 1 map. J. J. Crawford	----
Chapters of the State Mineralogist's Report, XIV Biennial Period, 1913, 1914, Fletcher Hamilton:	
**Mines and Mineral Resources, Amador, Calaveras and Tuolumne Counties, 172 pp., paper	----
Mines and Mineral Resources, Colusa, Glenn, Lake, Marin, Napa, Solano, Sonoma and Yolo Counties, 208 pp., paper—Price $0.50, sales tax $0.01	.51
**Mines and Mineral Resources, Del Norte, Humboldt and Mendocino Counties, 59 pp., paper	----
**Mines and Mineral Resources, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin and Stanislaus Counties, 220 pp., paper	----
**Mines and Mineral Resources of Imperial and San Diego Counties, 113 pp., paper	----
**Mines and Mineral Resources, Shasta, Siskiyou and Trinity Counties, 180 pp., paper	----
**Fourteenth Report of the State Mineralogist, for the Biennial Period 1913-1914, Fletcher Hamilton, 1915: A General Report on the Mines and Mineral Resources of Amador, Calaveras, Tuolumne, Colusa, Glenn, Lake, Marin, Napa, Solano, Sonoma, Yolo, Del Norte, Humboldt, Mendocino, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, San Diego, Imperial, Shasta, Siskiyou and Trinity Counties, 974 pp., 275 illustrations, cloth	----
Chapters of the State Mineralogist's Report, XV Biennial Period, 1915-1916, Fletcher Hamilton:	
**Mines and Mineral Resources, Alpine, Inyo and Mono Counties, 176 pp., paper	----
Mines and Mineral Resources, Butte, Lassen, Modoc, Sutter and Tehama Counties, 91 pp., paper—Price $0.50, sales tax $0.01	.51

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

REPORTS—Continued

Asterisks (**) indicate the publication is out of print.	Price (including postage and sales tax)
Mines and Mineral Resources, El Dorado, Placer, Sacramento and Yuba Counties, 198 pp., paper—Price $0.75, sales tax $0.02	$0.77
Mines and Mineral Resources, Monterey, San Benito, San Luis Obispo, Santa Barbara and Ventura Counties, 183 pp., paper—Price $0.75, sales tax $0.02	.77
**Mines and Mineral Resources, Los Angeles, Orange and Riverside Counties, 136 pp., paper	----
**Mines and Mineral Resources, San Bernardino and Tulare Counties, 186 pp., paper	----
**Fifteenth Report of the State Mineralogist, for the Biennial Period 1915-1916, Fletcher Hamilton, 1917: A General Report on the Mines and Mineral Resources of Alpine, Inyo, Mono, Butte, Lassen, Modoc, Sutter, Tehama, Placer, Sacramento, Yuba, Los Angeles, Orange, Riverside, San Benito, San Luis Obispo, Santa Barbara, Ventura, San Bernardino and Tulare Counties, 990 pp., 413 illustrations, cloth	----
Chapters of the State Geologist's Report XVI, Biennial Period, 1917-1918, Fletcher Hamilton:	
Mines and Mineral Resources of Nevada County, 270 pp., paper—Price $1.00, sales tax $0.03	1.03
Mines and Mineral Resources of Plumas County, 188 pp., paper—Price $0.50, sales tax $0.01	.51
Mines and Mineral Resources of Sierra County, 144 pp., paper—Price $0.75, sales tax $0.02	.77
Seventeenth Report of the State Mineralogist, 1920, 'Mining in California during 1920,' Fletcher Hamilton; 562 pp., 71 illustrations, cloth—Price $2.50, sales tax $0.06	2.56
Eighteenth Report of the State Mineralogist, 1922, 'Mining in California,' Fletcher Hamilton. Chapters published monthly beginning with January, 1922:	
**January, **February, **March, **April, May, June, July, August, September, October, November, December, 1922—Price $0.30, sales tax $0.01	.31
Chapters of Nineteenth Report of the State Mineralogist, 'Mining in California,' Fletcher Hamilton and Lloyd L. Root. January, February, March, September, 1923—Price $0.30, sales tax $0.01	.31
Chapters of Twentieth Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly. January, April, July, October, 1924, per copy—Price $0.30, sales tax $0.01	.31
Chapters of Twenty-first Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly:	
January, 1925, Mines and Mineral Resources of Sacramento, Monterey and Orange Counties—Price $0.30, sales tax $0.01	.31
April, 1925, Mines and Mineral Resources of Calaveras, Merced, San Joaquin, Stanislaus and Ventura Counties—Price $0.30, sales tax $0.01	.31
**July, 1925, Mines and Mineral Resources of Del Norte, Humboldt and San Diego Counties	----
**October, 1925, Mines and Mineral Resources of Siskiyou, San Luis Obispo and Santa Barbara Counties	----
Chapters of Twenty-second Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly:	
**January, 1926, Mines and Mineral Resources of Trinity and Santa Cruz Counties	----
April, 1926, Mines and Mineral Resources of Shasta, San Benito and Imperial Counties—Price $0.30, sales tax $0.01	.31
July, 1926, Mines and Mineral Resources of Marin and Sonoma Counties—Price $0.30, sales tax $0.01	.31
**October, 1926, Mines and Mineral Resources of El Dorado and Inyo Counties, also report on Minaret District, Madera County	----

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

REPORTS—Continued

Asterisks (**) indicate the publication is out of print. Price (including postage and sales tax)

Chapters of Twenty-third Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly:

January, 1927, Mines and Mineral Resources of Contra Costa County; Santa Catalina Island——Price $0.30, sales tax $0.01 $0.31

April, 1927, Mines and Mineral Resources of Amador and Solano Counties Price $0.30, sales tax $0.01 .31

**July, 1927, Mines and Mineral Resources of Placer and Los Angeles Counties —— ----

October, 1927, Mines and Mineral Resources of Mono County—— Price $0.30, sales tax $0.01 .31

Chapters of Twenty-fourth Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly:

January, 1928, Mines and Mineral Resources of Tuolumne County—— Price $0.30, sales tax $0.01 .31

April, 1928, Mines and Mineral Resources of Mariposa County—— Price $0.30, sales tax $0.01 .31

**July, 1928, Mines and Mineral Resources of Butte and Tehama Counties—— ----

October, 1928, Mines and Mineral Resources of Plumas and Madera Counties ——Price $0.30, sales tax $0.01 .31

Chapters of Twenty-fifth Report of the State Mineralogist, 'Mining in California,' Walter W. Bradley. Published quarterly:

**January, 1929, Mines and Mineral Resources of Lassen, Modoc and Kern Counties; also on Special Placer Machines—— ----

**April, 1929, Mines and Mineral Resources of Sierra, Napa, San Francisco and San Mateo Counties—— ----

July, 1929, Mines and Mineral Resources of Colusa, Fresno and Lake Counties ——Price $0.30, sales tax $0.01 .31

October, 1929, Mines and Mineral Resources of Glenn, Alameda, Mendocino and Riverside Counties——Price $0.30, sales tax $0.01 .31

Chapters of Twenty-sixth Report of the State Mineralogist, 'Mining in California,' Walter W. Bradley. Published quarterly:

January, 1930, Mines and Mineral Resources of Santa Clara County; also Barite in California——Price $0.40, sales tax $0.01 .41

**April, 1930, Mines and Mineral Resources of Nevada County; also Mineral Paint Materials in California—— ----

**July, 1930, Mines and Mineral Resources of Yuba and San Bernardino Counties; also Commercial Grinding Plants in California—— ----

October, 1930, Mines and Mineral Resources of Butte, Kings and Tulare Counties; also Geology of Southwestern Mono County (Preliminary) Price $0.40, sales tax $0.01 .41

Chapters of Twenty-seventh Report of the State Mineralogist, 'Mining in California,' Walter W. Bradley. Published quarterly:

January, 1931. Preliminary Report of Economic Geology of the Shasta Quadrangle. Beryllium and Beryl. The New Tariff and Nonmetallic Products. Crystalline Talc. Decorative Effects in Concrete—— Price $0.40, sales tax $0.01 .41

April, 1931, Stratigraphy of the Kreyenhagen Shale. Diatoms and Silicoflagellates of the Kreyenhagen Shale. Foraminifera of the Kreyenhagen Shale. Geology of Santa Cruz Island—— Price $0.40, sales tax $0.01 .41

**July, 1931. (Yuba, San Bernardino.) Feldspar, Silica, Andalusite and Cyanide Deposits of California. Note on a Deposit of Andalusite in Mono County; its occurrence and chemical importance. Bill creating Trinity and Klamath River Fish and Game District and its effect upon mining —— ----

October, 1931. (Alpine.) Geology of the San Jacinto Quadrangle south of San Gorgonio Pass, California. Notes on Mining Activities in Inyo and Mono Counties in July, 1931——Price $0.40, sales tax $0.01 .41

Chapters of Twenty-eighth Report of the State Mineralogist, 'Mining in California,' Walter W. Bradley. Published quarterly:

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

REPORTS—Continued

Asterisks (**) indicate the publication is out of print. Price (including postage and sales tax)

January, 1932, Economic Mineral Deposits of the San Jacinto Quadrangle. Geology and Physical Properties of Building Stone from Carmel Valley. Contributions to the Study of Sediments. Sediments of Monterey Bay. Sanbornite_____Price $0.40, sales tax $0.01 $0.41

**April, 1932. Elementary Placer Mining Methods and Gold Saving Devices. The Pan, Rocker and Sluice Box. Prospecting for Vein Deposits. Bibliography of Placer Mining_____ ----

**Abstract from April quarterly: Elementary Placer Mining Methods and Gold Saving Devices. Types of Deposits, Simple Equipment. Special Machines. Dry Washing. Black Sand Treatment. Marketing of Products. Placer Mining Areas. Laws. Prospecting for Quartz Veins. Bibliography (mimeographed)

**July-October, (Ventura.) Report accompanying Geologic Map of Northern Sierra Nevada. Fossil Plants in Auriferous Gravels of the Sierra Nevada. Glacial and Associated Stream Deposits of the Sierra Nevada. Jurassic and Cretaceous Divisions in the Knoxville-Shasta Succession of California. Geology of a Part of the Panamint Range. Economic Report of a Part of the Panamint Range. Acquiring Mining Claims Through Tax Title. The Biennial Report of State Mineralogist_____ ----

Chapters of Report XXIX, 1933 (quarterly): title 'California Journal of Mines and Geology,' containing the following:

January-April. Gold Deposits of the Redding and Weaverville Quadrangles. Geologic Formations of the Redding-Weaverville District, Northern California. Geology of Portions of Del Norte and Siskiyou Counties. Applications of Geology to Civil Engineering. The Lakes of California. Discovery of Piedmontite in the Sierra Nevada. Tracing 'Buried River' Channel Deposits by Geomagnetic Methods. Geologic Map of Redding-Weaverville District, showing gold mines and prospects. Geologic map showing various mines and prospects of part of Del Norte and Siskiyou Counties_____Price $1.00, sales tax $0.03 1.03

July-October. Gold Resources of Kern County. Limestone Deposits of the San Francisco Region. Limestone Weathering and Plant Associations of the San Francisco Region. Booming, Death Valley National Monument, California. Placer Mining Districts, Senate Bill 480. Navigable Waters, Assembly Bill 1543_____Price $1.00, sales tax $0.03 1.03

Chapters of Report XXX, 1934 (quarterly); titled 'California Journal of Mines and Geology,' containing the following:

January. Resurrection of Early Surfaces in the Sierra Nevada. Geology and Mineral Resources of Northeastern Madera County. Geology and Mineral Deposits of Laurel and Convict Basins, Southwestern Mono County. Notes on Sampling as Applied to Gold Quartz Deposits_____ Price $0.60, sales tax $0.02 .62

April-July. Elementary Placer Mining in California and Notes on the Milling of Gold Ores_____Price $1.00, sales tax $0.03 1.03

October. Current Mining Developments in Northern California. Current Mining Activity in Southern California. Geology and Mineral Resources of the Julian District, San Diego County. Geology and Mineral Resources of Elizabeth Lake Quadrangle. Dry Placers of Northern Mojave Desert. Biennial Report of State Mineralogist. Assessment Work Within Withdrawn Areas_____Price $0.60, sales tax $0.02 .62

Chapters of Report XXXI, 1935 (quarterly): titled 'California Journal of Mines and Geology,' containing the following:

January. Review of Gold Mining in East-Central California. 1934. Current Mining Activities in the San Francisco District with Special Reference to Gold. Geological Investigation of the Clays of Riverside and Orange Counties, Southern California. Information regarding Mining Loans by the Reconstruction Finance Corporation_____ Price $0.60, sales tax $0.02 .62

Generated on 2024-09-24 16:07 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

REPORTS—Continued

Asterisks (**) indicate the publication is out of print.	Price (including postage and sales tax)
April. A Geologic Section Across the Southern Peninsular Range of California. New Technique Applicable to the Study of Placers. Grubstake Permits——Price $0.60, sales tax $0.02	$0.62
July. Mines and Mineral Resources of Siskiyou County (with map). Dams for Hydraulic Mining Debris. Leasing System as Applied to Metal Mining. Mine Financing in California. New Laws Make Radical Change in Mining Rights——Price $0.60, sales tax $0.02	.62
October. Mines and Mineral Resources of San Luis Obispo County. Mineral Resources of Portions of Monterey and Kings Counties. Mining Activity at Soledad Mountain and Middle Buttes—Mojave District, Kern County. Geology of a Portion of the Perris Block, Southern California. Mineral Resources of a Portion of the Perris Block, Riverside County——Price $0.60, sales tax $0.02	.62
Chapters of Report XXXII, 1936 (quarterly) : titled 'California Journal of Mines and Geology,' containing the following :	
January. Gold Mines of Placer County, including Drag-line Dredges. Geologic Report on Borax Lake, California——Price $0.60, sales tax $0.02	.62
April. Geology, Mining and Processing of Diatomite at Lompoc, Santa Barbara County. Essentials in Developing and Financing a Prospect into a Mine. Gold-bearing Veins of Meadow Lake District, Nevada County. Semi-Precious Gem Stone Collection in Division Museum——Price $0.60, sales tax $0.02	.62
July. Mines and Mineral Resources of Calaveras County. Mining in California by Power Shovel. Assessment Work on Mining Claims Within Withdrawn Areas. Joshua Tree National Monument. Cost of Producing Quicksilver at a California Mine in 1931-1932. The Age of Mineral Utilization——Price $0.60, sales tax $0.02	.62
October. Mineral Resources of Lassen and Modoc Counties. Mechanics of Lone Mountain Landslides, San Francisco. Biennial Report of the State Mineralogist, Properties and Industrial Applications of Opaline Silica——Price $0.60, sales tax $0.02	.62
Chapters of Report XXXIII, 1937 (quarterly) : titled 'California Journal of Mines and Geology,' containing the following :	
January. Source Data of the Geologic Map of California, January, 1937. The Geology of Quicksilver Ore Deposits. Prospecting for Lode Gold——Price $0.60, sales tax $0.02	.62
April. Mineral Resources of Plumas County (with Geologic Map). List of preferred mineral names. New Placer Mining Debris Law——Price $0.60, sales tax $0.02	.62
July. Mineral Resources of Los Angeles County (with map showing principal Mines and Oil Fields). Geology and mineral deposits of the Western San Gabriel Mountains, Los Angeles County——Price $0.60, sales tax $0.02	.62
October. Mineral Resources of the Resting Springs Region, Inyo County. Paleozoic Section in the Nopah and Resting Springs Mountains, Inyo County, California. Native Arsenic from Grass Valley, California——Price $0.60, sales tax $0.02	.62
Chapters of Report XXXIV, 1938 (quarterly) : titled 'California Journal of Mines and Geology,' containing the following :	
January. Mineral Development and Mining Activity in Southern California during the year 1937. Doing Something About Earthquakes. Gold and Petroleum in California. Gem Minerals of California, Lapidary Art——Price $0.60, sales tax $0.02	.62
April. Gold Dredging in Shasta, Siskiyou and Trinity Counties; Geology of the Central Santa Monica Mountains; Marketing Mica——Price $0.60, sales tax $0.02	.62
July. El Dorado County, Mineral High-Lights of California; Strategic Minerals of California; Cyanide Treatment of Gossan at Mountain Copper Co.; Submarine Canyons off the California Coast——Price $0.60, sales tax $0.02	.62

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

REPORTS—Continued

Asterisks (**) indicate the publication is out of print. Price (including postage and sales tax)

October, Inyo County, Biennial Report of State Mineralogist, Sulphur Deposits of Inyo County, Geology of the Darwin-Lead Mining District
Price $0.60, sales tax $0.02 $0.62

Chapters of Report XXXV, 1939 (quarterly) titled "California Journal of Mines and Geology," containing the following:

January, San Diego County, Geology and Oil Possibilities of Southwestern San Diego Co.; Prospect for 'Minor Metals' and Nonmetallic Minerals; The Right to Mine—Price $0.60, sales tax $0.02 .62

April, Shasta County, Public's Interest in Mine Taxation—
Price $0.60, sales tax $0.02 .62

July, Tertiary Formations of Northern Sacramento Valley, California; Geology and Oil Possibilities of Caliente Range, Cuyama Valley and Carrizo Plain, California; Bibliography of the Geology and Mineral Resources of California for the year 1937; the Giant Goose Lake Meteorite from Modoc County, California—Price $0.60, sales tax $0.02 .62

**October, Quicksilver Resources of California; Sulphate Minerals of the Leviathan Sulphur Mine, Alpine County, California— ----

Reprint of Quicksilver Resources—Price $0.50, sales tax $0.02 .52

Chapter of Report XXXVI, 1940 (quarterly) titled "California Journal of Mines and Geology," containing the following:

January Current Mining Activity in Southern California; Notes on Beryl with a Qualitative Analysis for Beryllium; Strategic Minerals Investigations Procedure followed by the U. S. Bureau of Mines—
Price $0.60, sales tax $0.02 .62

April, Mineral Resources of Mono County; General Geology and Ores of the Blind Spring Hill Mining District, Mono County, California; Short Report on the Geological Formations Encountered in Driving the Mono Craters Tunnel; Methods and Costs of Mining and Concentrating Chromite —Price $0.60, sales tax $0.02 .62

July, Economic Mineral Deposits of the Newberry and Ord Mountains, San Bernardino County; Geology of the Newberry and Ord Mountains, San Bernardino County, California; Notes on the Geology of a Portion of the Calico Mountains, San Bernardino County, California; Study of Chrome Process Aided by Martin Dennis Company—
Price $0.60, sales tax $0.02 .62

October, Mineral Resources of the Kernville Quadrangle; Strategic Problems of the Mineral Industry in California; Descriptive Geology of the Kernville Quadrangle, California; Biennial Report of the State Mineralogist; Strategic Tax Exemption; Federal Loans for Strategic Minerals —Price $0.60, sales tax $0.02 .62

Chapters of Report XXXVII, 1941 (quarterly) titled "California Journal of Mines and Geology," containing the following:

January, Mineral Resources of Trinity County; Strategic Minerals Procurement; Geologic Investigation of the Chromite Deposits of California; United States Supreme Court Renders Far-reaching Decision on Power Permits on "Navigable" Streams; Securities and Exchange Commission —Price $0.60, sales tax $0.02 .62

April, Tungsten Resources of California; Geological Progress of State Division of Mines; California Earthquakes of Mission Period, 1769-1838 —Price $0.60, sales tax $0.02 .62

July, (Nevada County Report and Maps) Mines and Mineral Resources of Nevada County; Price of Gold—Price $0.60, sales tax $0.02 .62

October, (Humboldt County) Mineral Resources of Humboldt County; Recent Developments in the Tungsten Resources of California; Tin in California—Price $0.60, sales tax $0.02 .62

Chapters of Report XXXVIII, 1942 (quarterly) titled "California Journal of Mines and Geology," containing the following:

January, Mines and Mineral Resources of Sierra County; Chromium—
Price $0.60, sales tax $0.02 .62

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

REPORTS—Continued

Asterisks (**) indicate the publication is out of print.

Price (including postage and sales tax)

April, Mineral Resources of Imperial County (report and map); Geology and Mineral Deposits of the Cargo Muchacho Mountains, Imperial County (map and report); Imperial Carbon Dioxide Gas Field; Legendary "White Metal" and Its "Ore"; Mine Assessment Work Suspended on Claims Within Withdrawn Areas
Price $0.60, sales tax $0.02 $0.62

July-October, Tungsten. Tabulated list of deposits; Economic Mineral Map No. 4—Tungsten; Geology of Ghost Canyon Deposit, Madera County; Geology of Welsh Deposit, Madera County; Geology of Confidence Mining District Deposits, Tuolumne County; Contact-Metamorphic Rocks of Twin Lakes Region, Fresno County; Coso Hot Springs Geology; Biennial Report of State Mineralogist
Price $1.20, sales tax $0.03 1.23

Chapters of Report XXXIX, 1943 (quarterly) titled "California Journal of Mines and Geology" containing the following:

January, Mines and Mineral Resources of Santa Cruz County (report and map); Organization and Service of the Division of Mines; Recent Activity in the Strategic Minerals in the San Francisco, Los Angeles, Sacramento, and Redding Field Districts; Department of Interior Information Service—Price $0.60, sales tax $0.02 .62

Subscription, $2.00 postpaid in advance

BULLETINS

**Bulletin No. 1. Description of Some Desiccated Human Remains, by Winslow Anderson. 1888, 41 pp., 6 illustrations ----

**Bulletin No. 2. Methods of Mine Timbering, by W. H. Storms. 1894, 58 pp., 75 illustrations ----

**Bulletin No. 3. Gas and Petroleum Yielding Formations of Central Valley of California, by W. L. Watts. 1894, 100 pp., 13 illustrations, 4 maps ----

**Bulletin No. 4. Catalogue of California Fossils, by J. G. Cooper. 1894, 73 pp., 67 illustrations. (Part I was published in the Seventh Annual Report of the State Mineralogist, 1887) ----

**Bulletin No. 5. The Cyanide Process, 1894, by Dr. A. Scheidel. 140 pp., 46 illustrations ----

**Bulletin No. 6. California Gold Mill Practices, 1895, by E. B. Preston. 85 pp., 46 illustrations ----

**Bulletin No. 7. Mineral Production of California, by Counties, for the year 1894, by Charles G. Yale. Tabulated sheet ----

**Bulletin No. 8. Mineral Production of California, by Counties, for the year 1895, by Charles G. Yale. Tabulated sheet ----

**Bulletin No. 9. Mine Drainage, Pumps, etc., by Hans C. Behr. 1896, 210 pp., 206 illustrations ----

**Bulletin No. 10. A Bibliography Relating to the Geology, Paleontology and Mineral Resources of California, by Anthony W. Vogdes. 1896, 121 pp. ----

**Bulletin No. 11. Oil and Gas Yielding Formations of Los Angeles, Ventura and Santa Barbara Counties, by W. L. Watts. 1897, 94 pp., 6 maps, 31 illustrations ----

**Bulletin No. 12. Mineral Production of California, by Counties, for 1896, by Charles G. Yale. Tabulated sheet ----

**Bulletin No. 13. Mineral Production of California, by Counties, for 1897, by Charles G. Yale. Tabulated sheet ----

**Bulletin No. 14. Mineral Production of California, by Counties, for 1898, by Charles G. Yale ----

**Bulletin No. 15. Map of Oil City Fields, Fresno County, by John H. Means, 1899 ----

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

BULLETINS—Continued

Asterisks (**) indicate the publication is out of print. Price (including postage and sales tax)

**Bulletin No. 16. The genesis of Petroleum and Asphaltum in California, by A. S. Cooper. 1899, 39 pp., 29 illustrations ----
**Bulletin No. 17. Mineral Production of California, by Counties, for 1899, by Charles G. Yale. Tabulated sheet ----
**Bulletin No. 18. Mother Lode Region of California, by W. H. Storms, 1900, 154 pp., 49 illustrations ----
**Bulletin No. 19. Oil and Gas Yielding Formations of California, by W. L. Watts. 1900, 236 pp., 60 illustrations, 8 maps ----
**Bulletin No. 20. Synopsis of General Report of State Mining Bureau, by W. L. Watts. 1901, 21 pp. This bulletin contains a brief statement of the progress of the mineral industry in California for the four years ending December, 1899 ----
**Bulletin No. 21. Mineral Production of California by Counties, by Charles G. Yale. 1900. Tabulated sheet ----
**Bulletin No. 22. Mineral Production of California for Fourteen Years, by Charles G. Yale. 1900. Tabulated sheet ----
Bulletin No. 23. The Copper Resources of California, by P. C. DuBois, F. M. Anderson, J. H. Tibbits and G. A. Tweedy. 1902, 282 pp., 69 illustrations, 9 maps ----Price $0.75, sales tax $0.02 $0.77
**Bulletin No. 24. The Saline Deposits of California, by G. E. Bailey. 1902, 216 pp., 99 illustrations, 5 maps ----
**Bulletin No. 25. Mineral Production of California, by Counties, for 1901, by Charles G. Yale. Tabulated sheet ----
**Bulletin No. 26. Mineral Production of California for the Past Fifteen Years, by Charles G. Yale. 1902. Tabulated sheet ----
**Bulletin No. 27. The Quicksilver Resources of California, by William Forstner. 1903, 273 pp., 144 illustrations, 8 maps ----
**Bulletin No. 28. Mineral Production of California for 1902, by Charles G. Yale. Tabulated sheet ----
**Bulletin No. 29. Mineral Production of California for Sixteen Years, by Charles G. Yale. 1903. Tabulated sheet ----
**Bulletin No. 30. Bibliography Relating to the Geology, Palentology and Mineral Resources of California, by A. W. Vogdes. 1903, 290 pp. ----
**Bulletin No. 31. Chemical Analyses of California Petroleum, by H. N. Cooper. 1904. Tabulated sheet ------
**Bulletin No. 32. Production and Use of Petroleum in California by Paul W. Prutzman. 1904, 230 pp., 116 illustrations, 14 maps ----
**Bulletin No. 33. Mineral Production of California, by Counties, for 1903, by Charles G. Yale. Tabulated sheet ----
**Bulletin No. 34. Mineral Production of California for Seventeen Years, by Charles G. Yale. 1904. Tabulated sheet ----
**Bulletin No. 35. Mines and Minerals of California, by Charles G. Yale, 1904, 55 pp., 20 county maps. Relief maps of California ----
**Bulletin No. 36. Gold Dredging in California, by J. E. Doolittle. 1905. 120 pp., 60 illustrations, 3 maps ----
**Bulletin No. 37. Gems, Jewelers' Materials, and Ornamental Stones of California, by George F. Kunz. 1905, 168 pp., 54 illustrations ----
**Bulletin No. 38. Structural and Industrial Materials of California, by Wm. Forstner, T. C. Hopkins, C. Naramore and L. H. Eddy. 1906, 412 pp., 150 illustrations, 1 map ----
**Bulletin No. 39. Mineral Production of California, by Counties, for 1904, by Charles G. Yale. Tabulated sheet ----
**Bulletin No. 40. Mineral Production of California for Eighteen Years, by Charles G. Yale. 1905. Tabulated sheet ----
**Bulletin No. 41. Mines and Minerals of California for 1904, by Charles G. Yale. 1905, 54 pp., 20 county maps ----
**Bulletin No. 42. Mineral Production of California, by Counties, 1905, by Charles G. Yale. Tabulated sheet ----

Generated on 2024-09-24 16:03 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

BULLETINS—Continued

Asterisks (**) indicate the publication is out of print.

	Price (including postage and sales tax)
**Bulletin No. 43. Mineral Production of California for Nineteen Years, by Charles G. Yale. Tabulated sheet	----
**Bulletin No. 44. California Mines and Minerals for 1905, by Charles G. Yale. 1907, 31 pp., 20 county maps	----
**Bulletin No. 45. Auriferous Black Sands of California, by J. A. Edman, 1907. 10 pp.	----
**Bulletin No. 46. General Index of Publications of the California State Mining Bureau, by Charles G. Yale. 1907, 54 pp.	----
**Bulletin No. 47. Mineral Production of California, by Counties, 1906, by Charles G. Yale. Tabulated sheet	----
**Bulletin No. 48. MineralProduction of California for Twenty Years, by Charles G. Yale. 1906	----
**Bulletin No. 49. Mines and Minerals of California for 1906, by Charles G. Yale. 34 pp.	----
Bulletin No. 50. The Copper Resources of California, 1908, by A. Hausmann, J. Kruttschnitt, Jr., W. E. Thorn and J. A. Edman, 366 pp., 74 illustrations. (Revised edition)	Price $1.50, sales tax $0.04 $1.54
**Bulletin No. 51. Mineral Production of California, by Counties, 1907, by D. H. Walker. Tabulated sheet	----
**Bulletin No. 52. Mineral Production of California for Twenty-one Years, by D. H. Walker. 1907. Tabulated sheet	----
**Bulletin No. 53. Mineral Production of California for 1907, with County Maps, by D. H. Walker, 62 pp.	----
**Bulletin No. 54. Mineral Production of California, by Counties, by D. H. Walker. 1908. Tabulated sheet	----
**Bulletin No. 55. Mineral Production of California for Twenty-two Years, by D. H. Walker. 1908. Tabulated sheet	----
**Bulletin No. 56. Mineral Production for 1908, with County Maps and Mining Laws of California, by D. H. Walker, 78 pp.	----
**Bulletin No. 57. Gold Dredging in California, by W. B. Winston and Chas. Janin. 1910, 312 pp., 239 illustrations, 10 maps	----
**Bulletin No. 58. Mineral Production of California, by Counties, by D. H. Walker. 1909. Tabulated sheet	----
**Bulletin No. 59. Mineral Production of California for Twenty-three Years, by D. H. Walker. 1900. Tabulated sheet	----
**Bulletin No. 60. Mineral Production for 1909, with County Maps and Mining Laws of California, by D. H. Walker. 94 pp.	----
**Bulletin No. 61. Mineral Production of California, by Counties, for 1910, by D. H. Walker. Tabulated sheet	----
**Bulletin No. 62. Mineral Production of California for Twenty-four Years, by D. H. Walker. 1910. Tabulated sheet	----
**Bulletin No. 63. Petroleum in Southern California, by P. W. Prutzman. 1912, 430 pp., 41 illustrations, 6 maps	----
**Bulletin No. 64. Mineral Production for 1911, by E. S. Boalich. 49 pp.	----
**Bulletin No. 65. Mineral Production for 1912, by E. S. Boalich. 64 pp.	----
**Bulletin No. 66. Mining Laws of the United States and California. 1914, 89 pp.	----
**Bulletin No. 67. Minerals of California, by Arthur S. Eakle. 1914, 226 pp.	----
**Bulletin No. 68. Mineral Production for 1913, with County Maps and Mining Laws, by E. S. Boalich. 160 pp.	----
**Bulletin No. 69. Petroleum Industry of California, with Folio of Maps (18 by 22), by R. P. McLaughlin and C. A. Waring. 1914, 519 pp., 13 illustrations, 83 figs. [18 plates in accompanying folio.]	----
**Bulletin No. 70. Mineral Production for 1914, with County Maps and Mining Laws. 184 pp.	----
**Bulletin No. 71. Mineral Production for 1915, with County Maps and Mining Laws, by Walter W. Bradley, 193 pp. 4 illustrations	----
**Bulletin No. 72. The Geoolgic Formations of California, by James Perrin Smith. 1916, 47 pp.	----

Generated on 2024-09-24 16:06 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

BULLETINS—Continued

Asterisks (**) indicate the publication is out of print. Price (including postage and sales tax)

**Reconnaissance Geologic Map (of which Bulletin 72 is explanatory), in 23 colors. Scale: 1 inch = 12 miles. Mounted ----

**Bulletin No. 73. First Annual Report of the State Oil and Gas Supervisor of California for the fiscal year 1915-16, by R. P. McLaughlin. 278 pp., 26 illustrations ----

**Bulletin No. 74. Mineral Production of California in 1916, with County Maps, by Walter W. Bradley. 179 pp., 12 illustrations ----

**Bulletin No. 75. United States and California Mining Laws. 1917, 115 pp., paper ----

Bulletin No. 76. Manganese and Chromium in California, by Walter W. Bradley, Emile Huguenin, C. A. Logan, W. B. Tucker and C. A. Waring. 1918, 248 pp., 51 illustrations, 5 maps, paper
Price $0.75, sales tax $0.02 $0.77

Bulletin No. 77. Catalogue of Publications of California State Minin Bureau, 1880-1917, by E. S. Boalich. 44 pp., paper Free

**Bulletin No. 78. Quicksilver Resources of California, with a Section on Metallurgy and Ore-Dressing, by Walter W. Bradley. 1919, 389 pp., 77 photographs and 42 plates (colored and line cuts), cloth ----

Bulletin No. 79. Magnesite in California, by Walter W. Bradley. 1925, 147 pp., 62 photographs, 11 line cuts and maps, cloth
Price $1.25, sales tax $0.03 1.28

†Bulletin No. 80. Tungsten. Molybdenum and Vanadium in California. (Not issued—See Apr. 1941 Chap. Report XXXVII.)

†Bulletin No. 81. Foothill Copper Belt of California. (Not issued.)

**Bulletin No. 82. Second Annual Report of the State Oil and Gas Supervisor, for the Fiscal Year 1916-1917, by R. P. McLaughlin. 1918, 412 pp., 31 illustrations, cloth ----

**Bulletin No. 83. California Mineral Production for 1917, with County Maps, by Walter W. Bradley. 179 pp., paper ----

**Bulletin No. 84. Third Annual Report of the State Oil and Gas Supervisor, for the Fiscal Year 1917-1918, by R. P. McLaughlin. 1918, 617 pp., 28 illustrations, cloth ----

**Bulletin No. 85. Platinum and Allied Metals in California, by C. A. Logan, 1919. 10 photographs, 4 plates, 120 pp., paper ----

**Bulletin No. 86. California Mineral Production for 1918, with County Maps, by Walter W. Bradley. 1919, 212 pp., paper ----

**Bulletin No. 87. Commercial Minerals of California, with notes on their uses, distribution, properties, ores, field tests and preparation for market, by W. O. Castello. 1920, 124 pp., paper ----

**Bulletin No. 88. California Mineral Production for 1919, with County Maps, by Walter W. Bradley. 1920, 204 pp., paper ----

**Bulletin No. 89. Petroleum Resources of California, with Special Reference to Unproved Areas, by Lawrence Vander Leck. 1921, 12 figures, 6 photographs, 6 maps in pocket, 186 pp., cloth ----

**Bulletin No. 90. California Mineral Production for 1920, with County Maps, by Walter W. Bradley. 1921, 218 pp., paper ----

**Bulletin No. 91. Minerals of California, by Arthur S. Eakle. 1923, 328 pp., cloth ----

**Bulletin No. 92. Gold Placers of California, by Charles S. Haley. 1923, 167 pp., 36 photographs and 7 plates (colored and line cuts, also geological map), cloth ----

**Bulletin No. 93. California Mineral Production for 1922, by Walter W. Bradley. 1923, 188 pp., paper ----

**Bulletin No. 94. California Mineral Production for 1923, by Walter W. Bradley. 1924, 162 pp., paper ----

**Bulletin No. 95. Geology and Ore Deposits of the Randsburg Qaudrangle, by Carlton D. Hulin. 1925, 152 pp., 49 photographs, 13 line cuts, 1 colored geologic map, cloth ----

† Not issued.

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

BULLETINS—Continued

Asterisks (**) indicate the publication is out of print.	Price (including postage and sales tax)
**Bulletin No. 96. California Mineral Production for 1924, by Walter W. Bradley. 1925, 173 pp., paper	----
**Bulletin No. 97. California Mineral Production for 1925, by Walter W. Bradley. 1926, 172 pp., paper	----
Bulletin No. 98. American Mining Law, by A. H. Ricketts, 1931, 811 pp., flexible leather—Price $2.50, sales tax $0.06	$2.56
Bulletin No. 99. Clay Resources and Ceramic Industry of California, by Waldemar Fenn Deitrich. 1928, 383 pp., 70 photographs, 12 line cuts including maps, cloth—Price $2.00, sales tax $0.05	2.05
**Bulletin No. 100. California Mineral Production for 1926, by Walter W. Bradley, 1927, 174 pp., paper	----
**Bulletin No. 101. California Mineral Production for 1927, by Henry H. Symons. 1928, 311 pp., paper	----
**Bulletin No. 102. California Mineral Production for 1928, by Henry H. Symons. 1929, 210 pp., paper	----
Bulletin No. 103. California Mineral Production for 1929, by Henry H. Symons. 1930, 231 pp., paper	----
Bulletin No. 104. Bibliography of the Geology and Mineral Resources of California, to the end of 1930, by Solon Shedd—Price $2.50, sales tax $0.06	2.56
Bulletin No. 105. Mineral Production in California for 1930 and Directory of Producers, by Henry H. Symons. 1931	
Bulletin No. 106. Superseded. (See Bulletin No. 120.)	
Bulletin No. 107. Mineral Production in California for 1931 and Directory of Producers, by Henry H. Symons. 1932	
Bulletin No. 108. Mother Lode Gold Belt of California, by Clarence A. Logan, 1934, 240 pp., with geologic and claim maps, cloth—Price $2.25, sales tax $0.06	2.31
Bulletin No. 109. California Mineral Production and Directory of Mineral Producers for 1932, by Henry H. Symons, 200 pp., paper	----
Bulletin No. 110. California Mineral Production and Director of Mineral Producers for 1933, by Henry H. Symons, 214 pp., paper	----
Bulletin No. 111. California Mineral Production and Directory of Mineral Producers for 1934, by Henry H. Symons, 334 pp., paper	----
Bulletin No. 112. California Mineral Production and Directory of Mineral Producers for 1935, by Henry H. Symons, 205 pp., paper	----
Bulletin No. 113. Minerals of California, by Adolf Pabst, 1938—Price $1.75, sales tax $0.04	1.79
Bulletin No. 114. California Mineral Production and Directory of Mineral Producers for 1936, by Henry H. Symons, 119 pp., paper	----
Bulletin No. 115. Bibliography of Geology and Mineral Resources of California, 1931 to 1936, by Solon Shedd, Supplementing Bulletin No. 104—Price $1.25, sales tax $0.03	1.28
Bulletin No. 116. California Mineral Production and Directory of Mineral Producers for 1937, by Henry H. Symons. 1938	
Bulletin No. 117. California Mineral Production and Director of Mineral Producers for 1938, by Henry H. Symons. 1939	
Bulletin No. 118 Geologic Formations and Economic Development of the Oil and Gas Fields of California, by O. P. Jenkins and others Part One—Development of the Industry, 1940 Part Two—Geology of California and the Occurrence of Oil and Gas, 1941 Part Three—Descriptions of Individual Oil and Gas Fields, 1943 Part Four—Glossaries, Bibliography, Map and Index, 1943 Four parts, paper covers; the set $4.00, sales tax $0.10	4.10
Bulletin No. 118. Cloth bound—Price $6.00, sales tax $0.15	6.15
**Bulletin No. 119. Mineral Production of California for 1939, and Directory of Producers, by Henry H. Symons. 1940	----
**Bulletin No. 120. Manner of Locating and Holding Mineral Claims in California (with forms), by A. H. Ricketts (revised 1941)	----

Generated on 2024-09-24 15:54 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

BULLETINS—Continued

Asterisks (**) indicate the publication is out of print.	Price (including postage and sales tax)
Bulletin No. 121. Mineral Production of California for 1940, and Directory of Producers, by Henry H. Symons. 1941	Free
Bulletin No. 122. Mineral Production of California for 1941; Directory of Producers, and Tables of Total Recorded Production by Counties, by Henry H. Symons, 377 pp., paper	Free
Bulletin No. 123. American Mining Law, by A. H. Ricketts, 1943, 1008 pp., cloth—Price $5.00, sales tax $0.13	$5.13
Bulletin No. 124. Commercial Minerals of California, by George L. Gary. A loose-leaf mimeographed bulletin arranged so that it may be revised and supplemented. 1942—Price $1.00, sales tax $0.03	1.03
With binder—Price $1.20, sales tax $0.04	1.24
Revised papers mailed upon receipt of postage	
Bulletin No. 125. Manganese in California (in press).	
Bulletin No. 126. Mineral Production of California for 1942, and Directory of Producers, by Henry H. Symons, 1943—Price $0.80, sales tax $0.02	.82
Bulletin No. 127. Manner of Locating and Holding Mineral Claims in California (with forms), by A. H. Ricketts (revised 1944)—Price $0.25, sales tax $0.01	.26

PRELIMINARY REPORTS

**Preliminary Report No. 1. Notes on Damage by Water in California Oil Fields, December, 1913. By R. P. McLaughlin, 4 pp.	----
**Preliminary Report No. 2. Notes on Damage by Water in California Oil Fields, March, 1914. By R. P. McLaughlin, 4 pp.	----
Preliminary Report No. 3. Manganese and Chromium, 1917. By E. S. Boalich. 32 pp.	Free
**Preliminary Report No. 4. Tungsten, Molybdenum and Vanadium. By E. S. Boalich and W. O. Castello, 1918. 34 pp. Paper	----
**Preliminary Report No. 5. Antimony, Graphite, Nickel, Potash, Strontium and Tin. By E. S. Boalich and W. O. Castello, 1918. 44 pp. Paper	----
Preliminary Report No. 6. A Review of Mining in California During 1919. By Fletcher Hamilton, 1920. 43 pp. Paper	Free
**Preliminary Report No. 7. The Clay Industry in California. By E. S. Boalich, W. O. Castello, E. Huguenin, C. A. Logan, and W. B. Tucker, 1920. 102 pp. 24 illustrations. Paper	----
**Preliminary Report No. 8. A Review of Mining in California During 1921, with Notes on the Outlook for 1922. By Fletcher Hamilton, 1922. 68 pp. Paper	----

MINERAL ABSTRACTS

Antimony, 26 pp.—Price $0.25, sales tax $0.01	.26
Iron, 52 pp.—Price $0.35, sales tax $0.01	.36
Pumice and Volcanic Ash, 50 pp.—Price $0.35, sales tax $0.01	.36
Sulphur, 23 pp.—Price $0.25, sales tax $0.01	.26
Tungsten, 33 pp.—Price $0.25, sales tax $0.01	.26

MISCELLANEOUS PUBLICATIONS

**First Annual Catalogue of the State Museum of California, being the collection made by the State Mining Bureau during the year ending April 16, 1881. 350 pp.	----
**Catalogue of books, maps, lithographs, photographs, etc., in the library of the State Mining Bureau at San Francisco, May 15, 1884. 19 pp.	----
**Catalogue of the State Museum of California, Volume II, being the collection made by the State Mining Bureau from April 16, 1881, to May 5, 1884. 220 pp.	----
**Catalogue of the State Museum of California, Volume III, being the collection made by the State Mining Bureau from May 15, 1884, to March 31, 1887. 195 pp.	----

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

MISCELLANEOUS PUBLICATIONS—Continued

Asterisks (**) indicate the publication is out of print.	Price (including postage and sales tax)
**Catalogue of the State Museum of California, Volume IV, being the collection made by the State Mining Bureau from March 30, 1887, to August 20, 1890. 261 pp.	----
Lakes of California—Price $0.25, sales tax $0.01	$0.26
In lots of 50 or more, C. O. D.	.10
Drift Mining in California (Reprint)—Price $0.25, sales tax $0.01	.26
**Catalogue of the Library of the California State Mining Bureau, September 1, 1892. 149 pp.	----
**Catalogue of West North American and Many Foreign Shells with Their Geographical Ranges, by J. G. Cooper. Printed for the State Mining Bureau, April, 1894	----
**Report of the Board of Trustees for the four years ending September, 1900. 15 pp. Paper	----
Reconnaissance of the Colorado Desert Mining District. By Stephen Bowers, 1901. 19 pp. 2 illustrations. Paper	Free
Commercial Mineral Notes. A monthly mimeographed sheet, beginning April, 1923—(by mail 25¢ annually)	Free
Write for latest revised price list.	

MAPS

Register of Mines with Maps

**Register of Mines, with Map, Amador County	----
Register of Mines, with Map, Butte County—Price $0.15, sales tax $0.01	.16
**Register of Mines, with Map, Calaveras County	----
**Register of Mines, with Map, El Dorado County	----
**Register of Mines, with Map, Inyo County	----
**Register of Mines, with Map, Kern County	----
**Register of Mines, with Map, Lake County	----
**Register of Mines, with Map, Mariposa County	----
Register of Mines, with Map, Nevada County	Free
**Register of Mines, with Map, Placer County	----
**Register of Mines, with Map, Plumas County	----
**Register of Mines, with Map, San Bernardino County	----
Register of Mines, with Map, San Diego County	Free
Register of Mines, with Map, Santa Barbara County (1906)—Price $0.15, sales tax $0.01	.16
**Register of Mines, with Map, Shasta County	----
**Register of Mines, with Map, Sierra County	----
**Register of Mines, with Map, Siskiyou County	----
**Register of Mines, with Map, Trinity County	----
**Register of Mines, with Map, Tuolumne County	----
Register of Mines, with Map, Yuba County (1905)—Price $0.15, sales tax $0.01	.16
**Register of Oil Wells, with Map, Los Angeles City (1906)	----

Other Maps

**Map of California, Showing Mineral Deposits (50x60 in.)	----
**Map of Forest Reserves in California	----
**Mineral and Relief Map of California	----
**Map of El Dorado County, Showing Boundaries, National Forests	----
**Map of Madera County, Showing Boundaries, National Forests	----
**Map of Placer County, Showing Boundaries, National Forests	----
**Map of Shasta County, Showing Boundaries, National Forests	----
**Map of Sierra County, Showing Boundaries, National Forests	----
**Map of Siskiyou County, Showing Boundaries, National Forests	----
**Map of Tuolumne County, Showing Boundaries, National Forests	----
**Map of Mother Lode Region	----
**Map of Desert Region of Southern California	----
Map of Minaret District, Madera County	.10

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Other Maps—Continued

Asterisks (**) indicate the publication is out of print.	Price (including postage and sales tax)
**Map of Copper Deposits in California	----
**Map of Calaveras County	----
**Map of Plumas County	----
**Map of Trinity County	----
**Map of Tuolumne County	----
**Geographical Map of Inyo County. Scale 1 inch equals 4 miles	----
**Map of California accompanying Bulletin No. 89, showing generalized classification of land with regard to oil possibilities. Map only, without Bulletin	----
**Geologic Map of California, 1916. Scale 1 inch equals 12 miles. Shows railroads, highways, post offices and other towns. Geological details lithographed in 23 colors. Mounted	----
**Unmounted	----
Geologic Map of California, 1938. Scale 8 miles per inch. Lithographed in 80 distinguishing colors and patterns showing geologic units. In 6 sections, each 32 in. x 42 in. Set of 6 sheets, unmounted. Sheets not sold separately—Price $4.00, sales tax $0.10	$4.10
Economic Series:	
No. 1. Quicksilver	
No. 2. Oil and Gas	
No. 3. Chromite	
No. 4. Tungsten	
No. 5. Manganese	
(See under separate listings below for prices)	
**Topographic Map of Sierra Nevada Gold Belt, showing distribution of auriferous gravels, accompanying Bulletin No. 92. In 4 colors	----
Geologic Map of Northern Sierra Nevada, showing Tertiary River Channels and Mother Lode Belt accompanying July-October Chapter of Report XXVIII of the State Mineralogist. (Sold singly)—Price $0.25, sales tax $0.01	.26
Map of Northern California, showing rivers and creeks which produced placer gold in 1932—Price $0.15, sales tax $0.01	16
Mother Lode Geologic and claim maps in 5 county sections: El Dorado, Amador, Calaveras, Tuolumne and Mariposa—Price $0.15, sales tax $0.01	.16
Map of Mariposa County, showing principal gold mines—Price $0.15, sales tax $0.01	.16
Geologic Map of Elizabeth Lake Quadrangle, Los Angeles and Kern Counties (accompanying October Chapter of Report XXX), sold separately—Price	.10
Map of Western Portion of Siskiyou County Showing Location of Principal Gold Mines (accompanying July Chapter of Report XXXI), sold separately—Price $0.15, sales tax $0.01	.16
Geologic Map of Redding and Weaverville Quadrangles Showing Location of Gold Mines—Price $0.15, sales tax $0.01	.16
Manganese Deposits, accompanying Bulletin 125, Map separately—Price $0.60, sales tax $0.02	.62
Map of Ancient Channel System, Calaveras County Map of Ancient Channels Between San Andreas and Mokelumne Hill Set of 2—Price $0.25, sales tax $0.01	.26
Minaret	.10
Perris Block Geologic	.10
Plumas County Geologic—Price $0.15, sales tax $0.01	.16
Shasta County—Price $0.15, sales tax $0.01	.16
El Dorado County—Price $0.15, sales tax $0.01	.16
Trinity County, Showing Locations of Principal Mineral Deposits (accompanying Jan. Chapt. of Report XXXVII)—Price $0.15, sales tax $0.01	.16
Quicksilver deposits, sold in conjunction with October 1939, Chapter of Report XXXV, Map separately—Price $0.50, sales tax $0.01	.51
Nevada County (accompanying July Chapter of Report XXXVII)—Price $0.15, sales tax $0.01	.16

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Other Maps—Continued

Asterisks (**) indicate the publication is out of print.	Price (including postage and sales tax)
Grass Valley and Nevada City District claim map	Price $0.10
Oil and Gas Fields Map, accompanying Bulletin 118, Map separately	Price $1.00, sales tax $0.03 — 1.03
Chromite deposits	Price $0.60, sales tax $0.02 — .62
Tungsten deposits, sold in conjunction with July-October 1942 Chapter of Report XXXVIII, Map separately	Price $0.60, sales tax $0.02 — .62

OIL AND GAS FIELD MAPS

The following maps are on sale at the State Division of Oil and Gas, Ferry Building, San Francisco, and the various branch offices. The maps are revised as development work advances and ownerships change. Price includes postage.

No.	*Price*
1—Sargent, Santa Clara County	$0.75
2—Santa Maria, including Cat Canyon—Los Alamos, Santa Barbara County	1.25
3—Santa Maria, including Casmalia and Lompoc, Santa Barbara County	1.25
4—Brea Olinda and East Coyote, Los Angeles, Orange Counties	1.25
6—Salt Lake—Beverly Hills, Los Angeles County	1.25
7—Sunset, including San Emidio, Kern County	1.25
8—South Midway, including Buena Vista Hills, Kern County	1.25
9—North Midway and McKittrick, Kern and San Luis Obispo Counties	1.25
10—South Belridge and McKittrick-Temblor oil fields, Kern County	1.25
11—Lost Hills and North Belridge, including Antelope Hills, Kern County	1.25
12—Devils Den, Kern County	1.00
13—Kern River and Kern Front fields, including portion of Poso Creek field, Kern County	1.00
14—Coalinga and East Coalinga Extension, Fresno County	1.50
15—Elk Hills, Kern County	1.25
16—Ventura-Ojai, Ventura County	1.25
17—Santa Paula-Ojai, including South Mountain, Ventura County	1.25
18—Sespe-Piru-Simi, including Bardsdale, Ventura County	1.50
18a—Newhall, Aliso Canyon, Newhall-Potrero, Del Valle and Oak Canyon, Los Angeles County	1.25
19—Arroyo Grande, San Luis Obispo County	1.00
20—Long Beach, Los Angeles County	1.75
21B—District 5, boundaries of areas including oil fields, Fresno, Kings and Kern Counties	1.00
21C—District 4, boundaries of areas including oil fields, Kern, Kings and Tulare Counties	1.25
22—District 3, boundaries of areas including oil fields, Santa Barbara County	.75
23—District 2, boundaries of areas including oil fields, Ventura County	1.00
24—District 1, boundaries of areas including oil fields, Los Angeles and Orange Counties	1.00
26—Huntington Beach, Orange County	1.50
27—Santa Fe Springs, Los Angeles County	1.25
28—Torrance, Los Angeles County	1.25
28a—Townlot area, Torrance field, Los Angeles County	.75
29—Dominguez, Los Angeles County	1.00
30—Rosecrans, Los Angeles County	1.25
31—Inglewood, Los Angeles County	1.25
32—Seal Beach, Los Angeles and Orange Counties	1.25
33—Rincon, Ventura County	1.50
34—Mt. Poso and Poso Creek, Kern County	1.00
35—Round Mountain, Kern County	1.00
36—Kettleman North Dome and Middle Dome, Fresno and Kings Counties	1.50
37—Montebello, Los Angeles County	1.00
38—Whittier, Los Angeles County	1.25

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

OIL AND GAS FIELD MAPS—Continued

No.	*Price*
39—West Coyote Oil Field, Los Angeles and Orange Counties	$1.25
40—Elwood, Goleta (abandoned), La Goleta (gas), Santa Barbara County	1.25
41—Potrero, Los Angeles County	1.00
42—Playa del Rey, Los Angeles County	1.50
43—Capitan, Santa Barbara County	1.00
44—Mesa, Santa Barbara County	1.50
46—Richfield, Orange County	1.25
48—Mountain View and Edison, Kern County	1.25
49—Fruitvale, Kern County	1.00
50—Wilmington, Los Angeles County	1.25
51—Santa Maria Valley, Santa Barbara County	1.00
52—El Segundo and Lawndale, Los Angeles County	1.50
53—Rio Bravo and Greeley, Kern County	1.00
54—Wasco oil field, Buttonwillow and Semitropic (gas), Kern County	1.25
55—Canal, Canfield Ranch, Coles Levee, Strand, Ten Section, Kern County	1.25
56—Paloma, Kern County	1.25
57—Rio Vista (gas), Sacramento, Solano, and Contra Costa Counties	1.00
58—Trico Gas, Kern, Kings and Tulare Counties	1.00
59—Raisin City, Helm and Riverdale, including Wheatville area, Fresno County	1.25

Generated on 2024-09-24 16:00 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Original from
THE OHIO STATE UNIVERSITY

INDEX

Page

Acreage proven oil and natural gas land ... 31
Aetna Quicksilver Mine condensers, photo of ... 50
Agricultural limestone ... 92
Alameda County ... 118
Alpine County ... 118
Alum (native) ... 106
Aluminum ... 32
Amador County ... 119
Amblygonite ... 93
American Petroleum Institute, cited ... 23, 26
American Potash and Chemical Co., plant, photos of ... 115
Andalusite ... 101
Antimony ... 33
  producers ... 145
  total production ... 33
  use of ... 33
Appendix ... 197–217
Architectural terra cotta ... 84
Arsenic ... 33
Art pottery ... 84
Asbestos ... 77
  producers ... 145
  use ... 77
Ash, volcanic ... 97
Asphalt ... 58
Bancroft, H. H., cited ... 41
Barite ... 78
  producers ... 145
  total production ... 79
Ballast, railroad ... 74
Bauxite ... 32
Benitoite ... 88
Bentonite ... 79
  producers ... 146
  total production ... 80
Beryl ... 34, 89
Beryllium ... 34
Bismuth ... 34
  use of ... 34
Bituminous rock ... 59
  producers ... 146
  total production ... 59
Borates ... 107
  producers ... 147
  production, 1864-1942 ... 108
Bradley, Walter W., photos by ... 36, 46, 115, 123, 134
Brick ... 60
  producers ... 152–155
  production of various kinds ... 60
  total production, 1893-1942 ... 61
Bromine ... 108
  producers ... 147
  total production ... 109
Brown, J. R., cited ... 38, 42
Building stone. (*See* Granite, Marble, Sandstone, etc.)
Butte County ... 119
Cadmium ... 35
Calaveras County ... 120
Calcium Chloride ... 109
  producers ... 148
  silicate ... 80
  producer ... 148
California, area of ... 117
  Oil and Gas Association, cited ... 20
Californite ... 89
Carbon dioxide gas (natural) produced ... 81
  producers ... 148
Carmel stone ... 69
Casinghead gas ... 18
Castro Chrome Associates Mill, photo of ... 36
Castro Chrome Associates, panning drill cuttings, at mine of, photo of ... 134
Celestite ... 104
Cement ... 62
  natural ... 62
  producers ... 149
  total production ... 63
Chemical stoneware ... 84
Chimney pipe ... 84

Generated on 2024-09-24 15:53 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Page

Chinaware ---- 84
Chromite ---- 35
occurrence of ---- 35
producers ---- 150
total production ---- 37
use of ---- 36
Chrysoprase ---- 89
Clay for oil well drilling mud ---- 83
Clay, pottery ---- 82
producers ---- 152–155
production, 1887-1942 ---- 84
products ---- 83
uses of, other than for pottery ---- 83
Coal ---- 15
producer ---- 155
total production of ---- 16
Cobalt ---- 37
Colemanite ---- 107
Colusa County ---- 120
Concrete, rock for ---- 74
Conduit ---- 84
Contra Costa County ---- 120
Copper ---- 37
producers ---- 156
production, 1882-1942 ---- 39
Coso Hot Springs Quicksilver Mine, photo of ---- 123
Counties, mineral production of ---- 13, 117–141
Cronise, T. F., cited ---- 96
Crushed rock ---- 73
producers ---- 184–190
Cryolite ---- 32
Curying ---- 63
Day, D. T., cited ---- 36
Del Norte County ---- 121
Department of Natural Resources ---- 198
Diamonds ---- 88
Diatomaceous earth. (*see* diatomite.)
Diatomite ---- 84
producers ---- 157
total production of ---- 85
Directory of producers ---- 143–196
Dolomite ---- 86
producers ---- 157
total production ---- 86
Drain tile ---- 84
Dumortierite ---- 101
El Dorado County ---- 121
Electric smelting of ferro alloys ---- 36
Electrical porcelain ---- 84
Eng. and Min. Jour., cited ---- 49
Faience tile ---- 84
Feldspar ---- 86
producer ---- 158
total production ---- 87
Ferro-chrome by electric furnace ---- 36
-manganese by electric furnace ---- 36
-silicon by electric furnace ---- 36
Fertilizers. (*See* Gypsum, Limestone, Phosphates, Potash.)
Fire brick ---- 60
clay ---- 84
Flue linings ---- 84
Fluorspar ---- 87
Fresno County ---- 121
Fuels ---- 15–31
Fuller's earth. (*See* Bentonite.)
producers ---- 146
Garnets (abrasive) ---- 88
Garnets (gem) ---- 89
Gas. (*See* Natural gas.)
Gasoline from natural gas ---- 18
Gaylord, H. M., cited ---- 41, 52
Gems ---- 88
producers ---- 158
total production ---- 89
varieties ---- 88
General Dry Battery Manganese Ore dressing plant, photo of ---- 46
Glass sand ---- 99
Glenn County ---- 122
Gold ---- 39–43
number of operating properties ---- 40
principal producers ---- 159–164
production by counties, 1942 ---- 40
Reserve Act, cited ---- 42
total production ---- 41
value 1887-1942 ---- 14

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Page

Goodyear, W. A., cited ---- 16
Granite ---- 63
  decomposed ---- 74
  producers ---- 165
  production, 1887-1942 ---- 64
  varieties of, in California ---- 63
Granules for roofing and stucco ---- 70, 74
Graphite ---- 90
  total production ---- 90
Gravel ---- 72
Grinding mill pebbles ---- 72
  producer ---- 186–192
Gypsum ---- 91
  producers ---- 166
  total production ---- 91
Hanks, Henry, cited ---- 21
Hittell, T. H., cited ---- 41
Hollow building tile or blocks ---- 60
Hübernite ---- 55
Humboldt County ---- 122
Imperial County ---- 122
Industrial limestone ---- 92
Industrial materials ---- 76–105
Infusorial earth ---- 85
Introduction ---- 9
Inyo County ---- 123
Iodine ---- 109
  producers ---- 167
  total production ---- 110
Iridium (*See* Platinum.)
Iron ore ---- 43
  producers ---- 167
  total production ---- 44
Kern County ---- 124
Kernite ---- 107
Kieselguhr ---- 85
Kings County ---- 124
Knudsen, E. T., cited ---- 19, 27
Kramerite ---- 107
Kunzite ---- 80
Kyanite ---- 101
Lake County ---- 125
Lassen County ---- 125
Lead ---- 44
  producers ---- 168
  production, 1877-1942 ---- 45
    of United States ---- 45
Lepidolite ---- 93
Letter of Transmittal ---- 7
Lime ---- 64
  producers ---- 169
  production, 1894-1941 ---- 65
Limestone ---- 92
  producers ---- 169
  production, 1894-1942 ---- 93
Lithia ---- 93
  producer ---- 170
Los Angeles County ---- 125
Macadam ---- 74
Madera County ---- 126
Magnesite ---- 65
  occurrence of ---- 66
  producers ---- 170
  production, 1887-1942 ---- 66
Magnesium salts ---- 110
  producers ---- 171
  production by years ---- 111
Manganese ---- 46
  producers ---- 171–172
  total production ---- 47
Marble ---- 67
  producers ---- 173
  production, 1887-1940 ---- 67
Marin County ---- 126
Mariposa County ---- 126
McCaskey, H. D., cited ---- 53
Mendocino County ---- 127
Mercantile Trust Review, cited ---- 41, 62
Merced County ---- 127
Merrill, Charles White, cited ---- 41, 52
Metal & Mineral Markets, cited ---- 33, 34, 35, 37, 44, 48, 49, 54, 56
Metals ---- 32–57
Mica ---- 94
  uses ---- 94
Mineral Yearbook, cited ---- 41, 52

Generated on 2024-09-24 15:57 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Page

Minerals, counties ---- 13, 117–141
industry, review of ---- 11
output by counties ---- 13, 117–141
by substances ---- 12
output, comparative value, 1941-1942 ---- 12
paint ---- 95
producers ---- 173
production, 1890-1942 ---- 95
production, 1887-1942 ---- 14
variety of, produced in California ---- 11–14
water ---- 96
producers ---- 174–175
production, 1887-1942 ---- 96
Mineral Resources West of Rocky Mountains, cited ---- 38
Mining and Scientific Press, cited ---- 22
Mines and Mining, code ---- 71–75
Miscellaneous stone ---- 186–192
producers ---- 75
production, 1893-1942 ---- 128
Modoc County ---- 73
Molding sand ---- 47
Molybdenum ---- 175
producer ---- 48
total production ---- 128
Mono County ---- 128
Monterey County ---- 79
Montmorillonite ---- 63
Monumental stone ---- 143–196
Names of producers in ---- 129
Napa County ---- 16
Natural gas ---- 17
amount produced, utilized ---- 17
distribution by counties ---- 18
gasoline from ---- 18
production, 1888-1942 ---- 17
production and value ---- 129
Nevada County ---- 48
Nickel ---- 111
Nitrates ---- 111
Nitrogen, atmospheric, fixation of ---- 26
Oil. (*See* Petroleum.)
in "storage" ---- 31
land, proven ---- 20
production and value of crude oil, 1941-1942 ---- 99
shale ---- 27
utilization of ---- 23
well data ---- 83
well drilling mud ---- 23, 28
wells operated by fields ---- 68
Onyx ---- 129
Orange County ---- 196
Ore and metal buyers ---- 71
Osmium (*See* Platinum.)
Paving blocks ---- 15
Peat ---- 72
Pebbles for grinding mills ---- 19–31
Petroleum ---- 20
average price by counties, 1932-1942 ---- 28
number of producing wells ---- 27
operating data ---- 22
production, 1875-1942 ---- 20
production and value by counties ---- 25, 28, 45
production by fields ---- 25
production of light and heavy gravities ---- 27
products, production of ---- 20, 24
specific gravity of ---- 23, 27
statistics of well operations ---- 21
total production ---- 14
value, 1887-1942 ---- 23, 28
yield per day of wells ---- 97
Phosphates ---- 130
Placer County ---- 73
Plaster and brick sand ---- 48
Platinum ---- 49
prices ---- 176
producers ---- 49
production of, 1887-1942 ---- 130
Plumas County ---- 84
Porcelain ---- 112
Potash ---- 176
producer ---- 112
total production of ---- 82
Pottery clays ---- 107
Probertite ---- 197–200
Public Resources Code ---- 201
Publications of Division of Mines, list of

Generated on 2024-09-24 15:58 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Page

Pumice ---- 97
producers ---- 177
total production ---- 98
Pyrites ---- 98
producer ---- 177
total production ---- 99
Pyroxine ---- 80
Quartz ---- 99
crystals (*See* Gems.)
Quicksilver ---- 49
prices ---- 49
producers ---- 178–179
production, 1850-1942 ---- 51
Randol, J. B., cited ---- 50
Rasorite ---- 107
Red earthenware ---- 84
Rhodonite ---- 89
Richardson, C. D., photo by ---- 50
Riprap ---- 74
Riverside County ---- 131
Rock, crushed ---- 74
Roofing granules ---- 74
slate ---- 70
tile ---- 84
Rubble ---- 74
Rubies ---- 89
Ruthenium (*See* Platinum.)
Sacramento County ---- 131
Salinas ---- 106–116
Salt ---- 112
chart showing uses ---- 113
producers ---- 180
production, 1887-1942 ---- 114
Salt Cake ---- 115
San Benito County ---- 131
San Bernardino County ---- 132
San Diego County ---- 132
San Francisco Bulletin, cited ---- 21
County ---- 133
San Joaquin County ---- 133
San Luis Obispo County ---- 133
San Mateo County ---- 134
Sand, glass ---- 99
Sand and gravel ---- 72
producers ---- 186–192
Sandstone ---- 68
producers ---- 181
production, 1887-1942 ---- 69
Sanitary ware ---- 84
Santa Barbara County ---- 135
Santa Clara County ---- 135
Santa Cruz County ---- 135
Sapphires ---- 89
Scheelite ---- 55
Scoria ---- 97
Semivitreous tableware ---- 84
Serpentine ---- 69
Sewer pipe ---- 84
Shale oil ---- 99
Shasta County ---- 136
Siebenthal, C. E., cited ---- 45
Sierra County ---- 136
Silica ---- 99
producers ---- 182
total production ---- 100
Sillimanite group ---- 101
producer ---- 182
total production ---- 102
Silver ---- 51
principal producers ---- 183–184
production by counties ---- 52
production, 1880-1942 ---- 53
Siskiyou County ---- 136
Slate ---- 70
producers ---- 184
production, 1889-1942 ---- 70
roofing granules ---- 70
Smelters, list of ---- 196
Soapstone ---- 102
composition ---- 102
producers ---- 185
total productions ---- 103
use ---- 102
varieties ---- 102
Soda ---- 115
producers ---- 185
total production ---- 116

Generated on 2024-09-24 15:56 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Page

Solano County ---- 137
Sonoma County ---- 137
Spark plugs, andalusite for ---- 101
Specific gravities of oil produced ---- 24
Spelter (*See* Zinc.)
Standard Oil Company, cited ---- 24
Stanislaus County ---- 138
State Division of Oil and Gas, cited ---- 27, 31
State Mineralogist Report, cited ---- 50
  Mining Bureau, cited ---- 44
  Oil and Gas, cited ---- 19
Stone, miscellaneous ---- 71–75
  producers ---- 186–192
  production by counties ---- 74
  production by years ---- 75
Stoneware ---- 84
Strontium ---- 104
  producers ---- 193
Structural materials ---- 58–75
Sulphur ---- 104
  producer ---- 193
  production by years ---- 105
Summary of Mineral Industry, 1942 ---- 11
Summary of Operations, California Oil Fields, cited ---- 26, 31
Sutter County ---- 138
Talc ---- 102
  producers ---- 185
  uses ---- 102
Tehama County ---- 138
Terra cotta ---- 84
Tile ---- 84
Tin ---- 53
Titanium ---- 54
  producer ---- 193
Topaz ---- 89
Tourmaline ---- 88
Travertine ---- 68
Trinity County ---- 139
Trona ---- 116
Tube mill pebbles ---- 72
Tuff, used for building stone ---- 63
Tulare County ---- 139
Tungsten ---- 55
  producers ---- 194–195
  total production ---- 56
Tuolumne County ---- 139
Turquoise ---- 89
U. S. Bureau of Mines, cited ---- 19, 27, 41, 52, 53, 62
  Census Bureau, cited ---- 117
  Geological Survey, cited ---- 16, 22, 53
Vanadium ---- 56
Ventura County ---- 140
Vitrified brick ---- 60
Volcanic ash ---- 97
  producers ---- 177
Well data, oil ---- 23
Witherite ---- 78
Wolframite ---- 54
Wollastonite ---- 80
Yale, Chas. D., cited ---- 42
Yolo County ---- 140
Yuba County ---- 141
Zinc ---- 56
  producers ---- 195
  production of United States ---- 56
  total production ---- 57
Zircon ---- 105

o

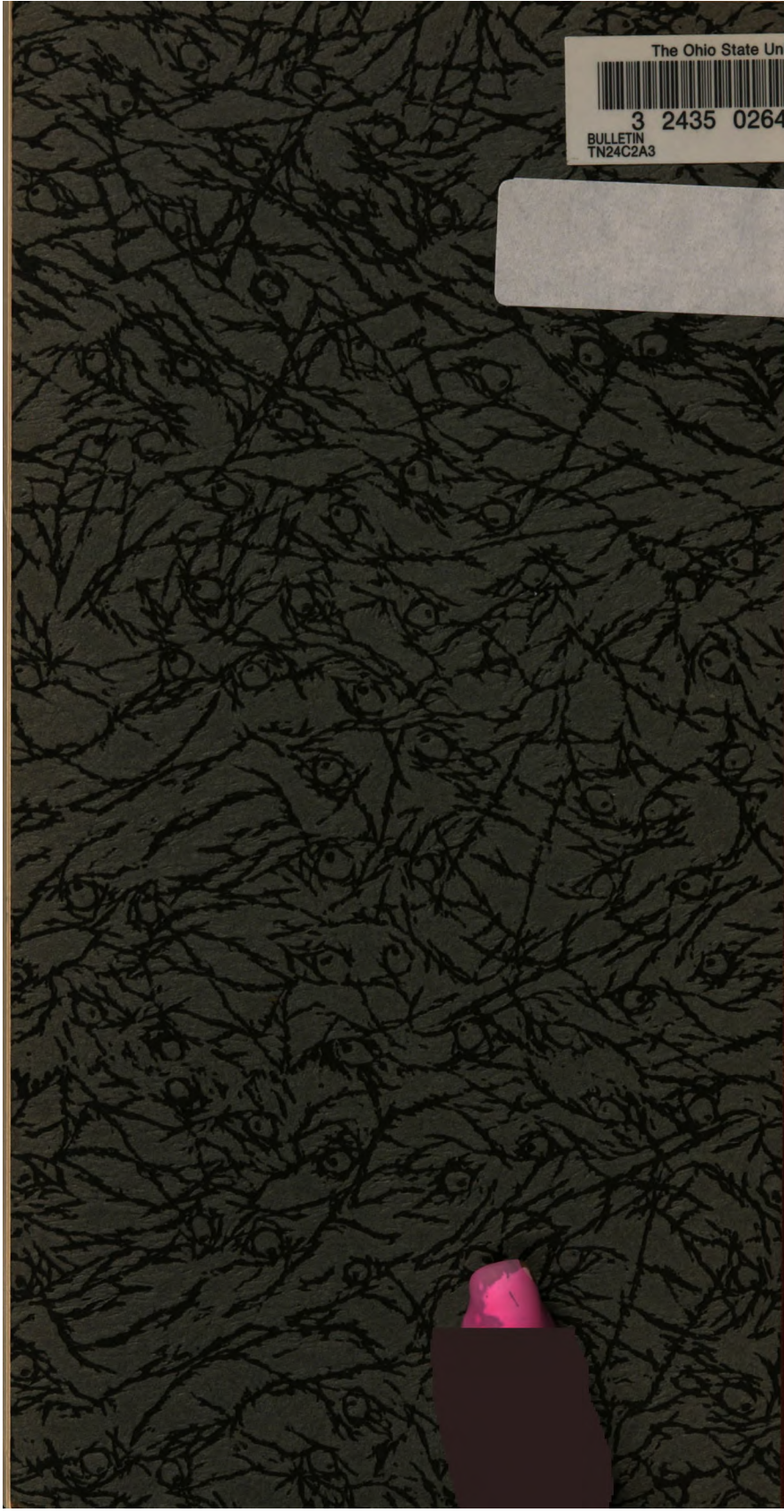
30633 5-44 1200

Generated on 2024-09-24 16:02 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from THE OHIO STATE UNIVERSITY

Generated on 2024-09-24 15:55 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Original from
THE OHIO STATE UNIVERSITY


The Ohio State University
3 2435 026407403
BULLETIN
TN24C2A3
001
NO126

Generated on 2024-09-24 16:01 GMT / https://hdl.handle.net/2027/osu.32435026407403
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google
Original from
THE OHIO STATE UNIVERSITY